



IN REPLY REFER TO:

United States Department of the Interior

NATIONAL PARK SERVICE

Glacier National Park
West Glacier, Montana 59936

L76-GLAC-03-020

APR 22 2003

Dear Friends:

Enclosed is Glacier National Park's Environmental Assessment (EA) to Rehabilitate Belton Bridge. The EA is also available on our website at www.nps.gov/glac. Glacier National Park (GNP) proposes to rehabilitate the Belton Bridge to improve its structural integrity and to make it available for pedestrian, horse, and bicycle traffic across the Middle Fork of the Flathead River. The bridge is located one-half mile east of the GNP Headquarters area. The action also includes gravel surfacing about one-half mile of the Belton entrance road trail between the bridge and the GNP Headquarters area, which is used as a pedestrian, horse, and bicycle path.

Although an EA and Finding of No Significant Impact was issued in 2001, the park has now determined that Phase II of the project would result in an adverse effect under Section 106 of the National Historic Preservation Act. A new EA is required because of this adverse effect determination.

Please send your comments by mail to Glacier National Park, Attn: Belton Bridge EA, PO Box 128, West Glacier, MT 59936. Comments may also be sent electronically to glac_public_comments@nps.gov, attention: Belton Bridge EA. The public comment period ends May 26, 2003.

The park's practice is to make comments, including names and home addresses of respondents, available for public review during regular business hours. Individual respondents may request that we withhold their home address from the record, which we will honor to the extent allowable by law. **If you wish us to withhold your address, you must state this prominently at the beginning of your comment.** We will make all submissions from organizations or businesses, and from individuals identifying themselves as representatives or officials of organizations or businesses, available for public inspection in their entirety.

Sincerely,

FOR

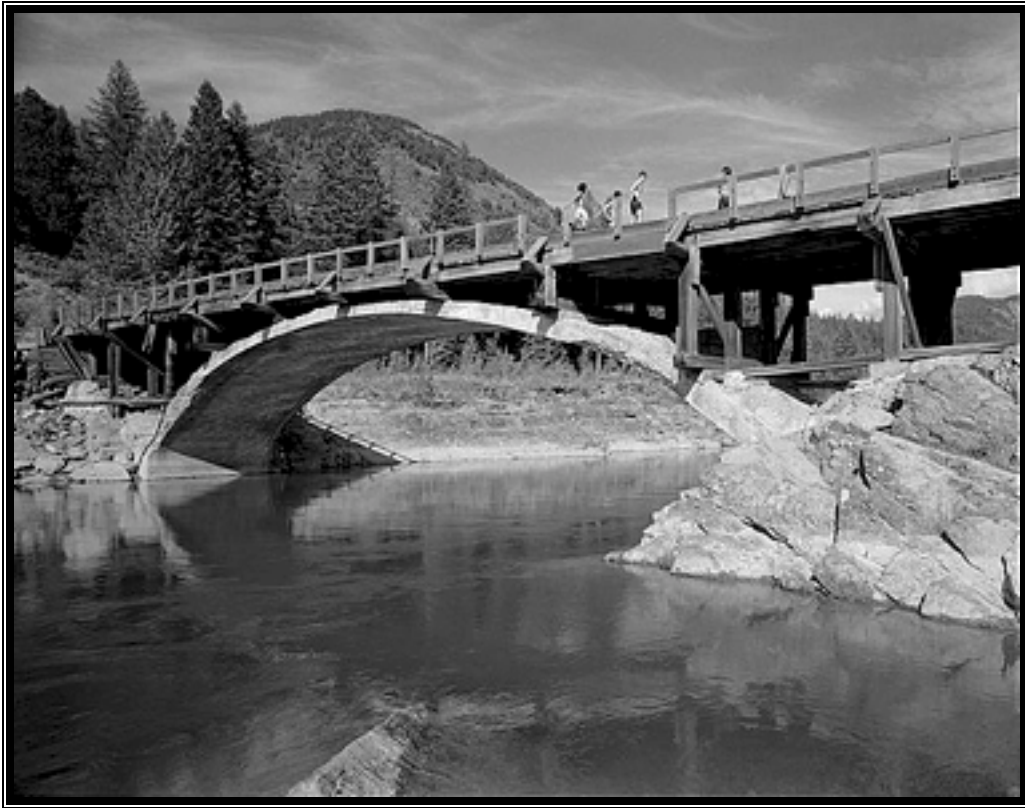
JERRY O'NEAL

Michael O. Holm
Superintendent

Enclosure

bcc: M. Riddle, L. Johnson, J. Gordon

Environmental Assessment/Assessment of Effect
April 2003



Historic American Engineering Record Photograph

Rehabilitate Belton Bridge
Glacier National Park
Montana

Rehabilitate Belton Bridge Environmental Assessment/Assessment of Effect

**Glacier National Park
West Glacier, Montana
U.S. Department of the Interior
National Park Service**

April 2003

SUMMARY

Glacier National Park (GNP) proposes to rehabilitate the Belton Bridge to improve its structural integrity and to make it available for pedestrian, horse, and bicycle traffic across the Middle Fork of the Flathead River. The bridge is located one-half mile east of the GNP Headquarters area. The action also includes gravel surfacing about one-half mile of the Belton entrance road trail between the bridge and the GNP Headquarters area, which is used as a pedestrian, horse, and bicycle path.

Glacier National Park prepared an Environmental Assessment for the project in 2001. The EA outlined a two-phase rehabilitation project. Under phase I, the bridge's abutments and retaining wing walls were reconstructed. Phase II included removal of the existing timber trestle bents, decking, and guardrails, rehabilitation of the concrete arch, and replacement of the bents, decking, and guardrails with new materials. The State Historic Preservation Officer (SHPO) concurred in a finding of no adverse effect for phase I of the project, but stipulated that additional consultation be undertaken and a Determination of Eligibility for listing in the National Register of Historic Places be prepared prior to beginning phase II.

In October 2002, the SHPO concurred with GNP's determination that the Belton Bridge met the criteria for listing in the National Register of Historic Places. Because phase II of the project would result in the loss of the timber trestle bents, decking, and guardrails, GNP finds that the project would have an adverse effect on the characteristics that qualify the bridge for listing in the National Register. This new environmental assessment (EA) is required because of the adverse effect finding.

Gravel surfacing of a 10-foot-wide trail on the abandoned Belton entrance road trail for pedestrian, horse, and bicycle use is a new, preferred alternative. The previous EA called for continued use of the road as a path, but not for surfacing. GNP believes the abandoned Belton Entrance Road qualifies for listing in the National Register of Historic Places, and plans to treat it as a cultural resource. Its appearance as a historic, graveled road would be maintained, but its usage would be limited to pedestrians, horses, and bicycles.

Alternatives considered for this environmental assessment (EA) include:

Alternative A: Do not rehabilitate the Belton Bridge (No Action).

Alternative B: Rehabilitate the Belton Bridge: remove existing timber trestle bents, decking, and guardrails, rehabilitate the concrete arch, and construct new bents, decking, and guardrails. Surface the Belton Entrance Road Trail (Preferred Alternative).

Notes to Reviewers and Respondents:

If you wish to comment on the environmental assessment, please send your comments to the address below, or transmit them to the park via e-mail at glac_public_comments@nps.gov. This environmental assessment will be on public review for 30 days in accordance with the National Environmental Policy Act. This environmental assessment is also available on our website at www.nps.gov/glac. Please note that names and addresses of people who comment become part of the public record. **If you wish us to withhold your name and/or address, you must state this prominently at the beginning of your comment.** We will make all submissions from organizations, businesses, and from individuals identifying themselves as representatives or officials of organizations or businesses available for public inspection in their entirety. At the conclusion of the comment period, the National Park Service will either issue a notice of intent to prepare an environmental impact statement or a finding of no significant impact.

Superintendent
Attention: Belton Bridge EA
Glacier National Park
West Glacier, MT 59936
(406) 888-7972

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PURPOSE AND NEED

Introduction

Glacier National Park is located on the Canadian border in the northwestern section of Montana (see Regional Setting Map). The park is in the northern Rockies, and contains the rugged mountains of the Continental Divide. Together with Canada's Waterton National Park, it forms Waterton-Glacier International Peace Park, and is a World Heritage Site. Outstanding natural and cultural resources are found in both parks.

The purpose of Glacier National Park is to:

- preserve and protect natural and cultural resources unimpaired for future generations (1916 Organic Act);
- provide opportunities to experience, understand, appreciate, and enjoy Glacier National Park consistent with the preservation of resources in a state of nature (1910 legislation establishing Glacier National Park); and
- celebrate the on-going peace, friendship, and goodwill among nations, recognizing the need for cooperation in a world of shared resources (1932 International Peace Park legislation).

Glacier's significance is explained relative to its natural and cultural heritage:

- Glacier's scenery dramatically illustrates an exceptionally long geological history and the many geological processes associated with mountain building and glaciation;
- Glacier offers relatively accessible spectacular scenery and increasingly rare primitive wilderness experience;
- Glacier is at the core of the "Crown of the Continent" ecosystem, one of the most ecologically intact areas remaining in the temperate regions of the world;
- Glacier's cultural resources chronicle the history of human activities (prehistoric people, American Indians, early explorers, railroad development, and modern use and visitation) show that people have long placed high value on the area's natural features; and
- Waterton-Glacier is the world's first international peace park.

Background of Project

The Belton Bridge spans the Middle Fork of the Flathead River approximately one-half mile east of Glacier National Park Headquarters and the town of West Glacier, Montana. The high water line on the north side of the Middle Fork of the Flathead River is the southern boundary of the park in this area. The Belton Bridge stands near the site of the first bridge at GNP's west entrance. In 1920, the park replaced the first bridge with a concrete arch structure. It served as the primary west side entrance from 1920 until 1938 when a new bridge was constructed downstream. In June 1964, a flood destroyed the 1938 replacement bridge and washed away all but the Belton Bridge's concrete arch. The park hastily constructed a timber trestle bridge atop the concrete arch to provide entrance to the park. This structure served as a temporary entrance for about two years. After completion of a new bridge just downstream in 1966, the Belton Bridge was again closed to vehicular traffic.

Hikers use the Belton Bridge to access popular trails along the Middle Fork of the Flathead River. The Belton Entrance Road Trail from GNP headquarters to the bridge also is the western portion of the Boundary Trail. This portion of the trail and the bridge are used by local residents as a hiking and bicycle crossing between the town of West Glacier and GNP headquarters. During the spring and summer, the Belton Bridge is also a popular exit point for river boaters and other recreationists. This section of the Middle Fork of the Flathead River was classified in 1976 as “Recreational” under the National Wild and Scenic Rivers Act; the National Park Service and the U.S. Forest Service are co-managers. Land on the south side of the bridge is privately owned.

Located along the southwest bank of the Middle Fork of the Flathead River, the town of West Glacier lies directly across the river from GNP. The GNP headquarters area, located just across the river from West Glacier, provides year round park administrative and operations facilities, and contains a residential area for some permanent and seasonal personnel.

Need for the Project

Safety concerns caused GNP to close the Belton Bridge to pedestrian traffic in 2000. The Federal Lands Highway Division of the Federal Highway Administration inspected the Belton Bridge in June 2000. The structural evaluation summary found:

This bridge is in very poor condition and has shown signs of continued deterioration over the past several inspection cycles. Many of the timber stringers, posts, caps, and sills are rotten and decayed. Isolated failures in some of the timber sills and caps have occurred within the past year, leading to substantial settlement/deflection in the deck. The log cribbing/timber lagging which compose the wingwalls at each end of the structure have either collapsed or are in very poor condition. Timber bents at each abutment show significant movement due to approach embankment earth pressure. NPS staff has recently constructed barricades at each end of the structure to close it to all use.

The approaches are in poor condition. Approach embankments have sloughed significantly due to failures of the wingwalls at both abutments.

At this time we are recommending that the timber bents (sills, posts and caps) be replaced. Individual stringers, which show advanced rot, should also be replaced. Additionally, the wingwalls and timber lagging behind each abutment will need to [be] reconstructed and the approach embankments rebuilt. Until the above deficiencies can be addressed, we are recommending the continued closure of this structure to all use. If temporary shoring were used to replace the currently failed members, we would support the limited use of this structure to pedestrian traffic only. Regardless of shoring however, significant reconstruction is warranted within the 12 months to avoid additional failure. [U.S. Department of Transportation, 2000]

Under phase I, of the Belton Bridge rehabilitation project, which was completed in 2002, the existing abutments and wing walls were replaced. The deteriorated timber trestle system remains,

but has been isolated from the abutments with the removal of the decking from the two outermost spans.

The replacement of the timber trestle system, decking, and guardrails is necessary to provide safe access to popular hiking and bicycling trails at this location. The preferred alternative would also prevent eventual collapse of the existing bridge into the river. Surfacing the entrance road trail with gravel would restore the 1930s' appearance of the road while preventing erosion from foot and bicycle traffic.

Impact Topics

A number of impact topics were evaluated in the 2001 Belton Bridge Environmental Assessment. Some of the impacts were relevant only to phase I of the project, which included opening access to the bridge along the Belton entrance road trail, and bridge abutment and wing wall replacement. For this new EA, GNP staff identified the following impact topics that are relevant to phase II:

Water Resources: Construction activity in this area could affect water quality from sedimentation. Therefore, Water Resources is included as an impact topic in this EA.

Wildlife Resources: There are a variety of wildlife species that utilize, pass through, or occur adjacent to the project area and that could be affected by the construction activity in the area. Therefore, Wildlife is included as an impact topic in this EA.

Threatened and Endangered Species and Species of Concern: The project area provides habitat for threatened and endangered species and state species of concern, including grizzly bear, Canada lynx, gray wolf, bald eagle, bull trout, westslope cutthroat trout, and a number of other species. Therefore they are analyzed as an impact topic in this EA.

Cultural Resources: There are no known archeological, cultural landscapes or ethnographic resources in the area, but the Belton Bridge has been determined eligible for listing in the National Register of Historic Places. Therefore, Historic Structures are included as an impact topic in this EA.

Visitor Use and Experience: Construction would occur after the main commercial and recreational rafting season ends, but may require some delays to rafters on the river. Therefore, Visitor Use and Experience is included as an impact topic in this EA. Improvements to the Belton Entrance Road Trail could affect visitors and provide them with enhanced hiking and biking opportunities. Visitors would also be affected during the construction period.

Park Operations: The proposal would have an effect on park operations because of the need to maintain the trail and bridge. Furthermore, the bridge is currently closed because it is structurally unsound. For some visitors this bridge and trail are a popular location in the park. Before it can be reopened to the public, the structural deterioration must be corrected. Therefore, Park Operations is included as an impact topic in this EA.

Impact Topics Eliminated from Detailed Study

Wild and Scenic River Qualities: The project would rehabilitate an existing structure on the Middle Fork of the Flathead River that pre-dates the designation of the Wild and Scenic River. There would be no long-term effects on the river and no change in free-flow status, water quality, riparian areas, floodplain conditions or any other outstanding, remarkable, or other significant features which led to the Wild and Scenic Rivers Act designation by construction of a new bridge or surfacing the Belton Entrance Road Trail. There would be no change to the existing bridge location or configuration.

Topography, Soils, Geology: Since the project is limited to rehabilitating the bridge deck and associated substructure, there is no affect on topography, soils, or geology associated with this project. The bridge abutment work was completed in phase I. The Belton Entrance Road Trail already exists and actions taken to surface it would have negligible affects on soils, topography and geology.

Aquatic Resources: While there are a number of fish species in the Middle Fork of the Flathead River that are considered rare, uncommon and common, the small amount of sediment and project activity would have negligible affects on these species. There is no known spawning in the vicinity of the project.

Vegetation: Rehabilitating the Belton Bridge and surfacing the Belton Entrance Road Trail would have negligible affects on vegetation. The previous EA addressed vegetation impacts relating to opening the Belton Entrance Road Trail for construction equipment and bridge abutment work. No new impacts are anticipated under this project.

Air Quality, Odor, Visual Resources and Natural Soundscapes: During construction activities, heavy equipment can stir up dust and make noise, while fuels can emit some odor. As a result, there may be negligible impacts during construction, but after completion there would be no affect on air quality, odor, or natural soundscapes associated with the proposed project. There would be no change in the types of activities that occur on a daily basis in this area and there would be no long-term change in the bridge's appearance, therefore Visual Resources are dismissed as an impact topic.

Socioeconomics: The proposed project would provide employment opportunity for only a few individuals for a short time period during construction. Since the work would occur after the main rafting season is over, the project would have negligible impacts on commercial rafting outfitters. Furthermore, any delays would likely be short term and should not result in trips being cancelled.

Floodplains: The proposed project is water dependent and therefore is an excepted action from compliance with NPS Guidelines for implementing Executive Order 11988, Floodplains. Furthermore, the project would not place structures in the floodplain that would impede a flood event. The floodplain would not be affected by this project.

Wetlands: There are no wetlands located within the project area, therefore this topic was dismissed from further consideration in this EA.

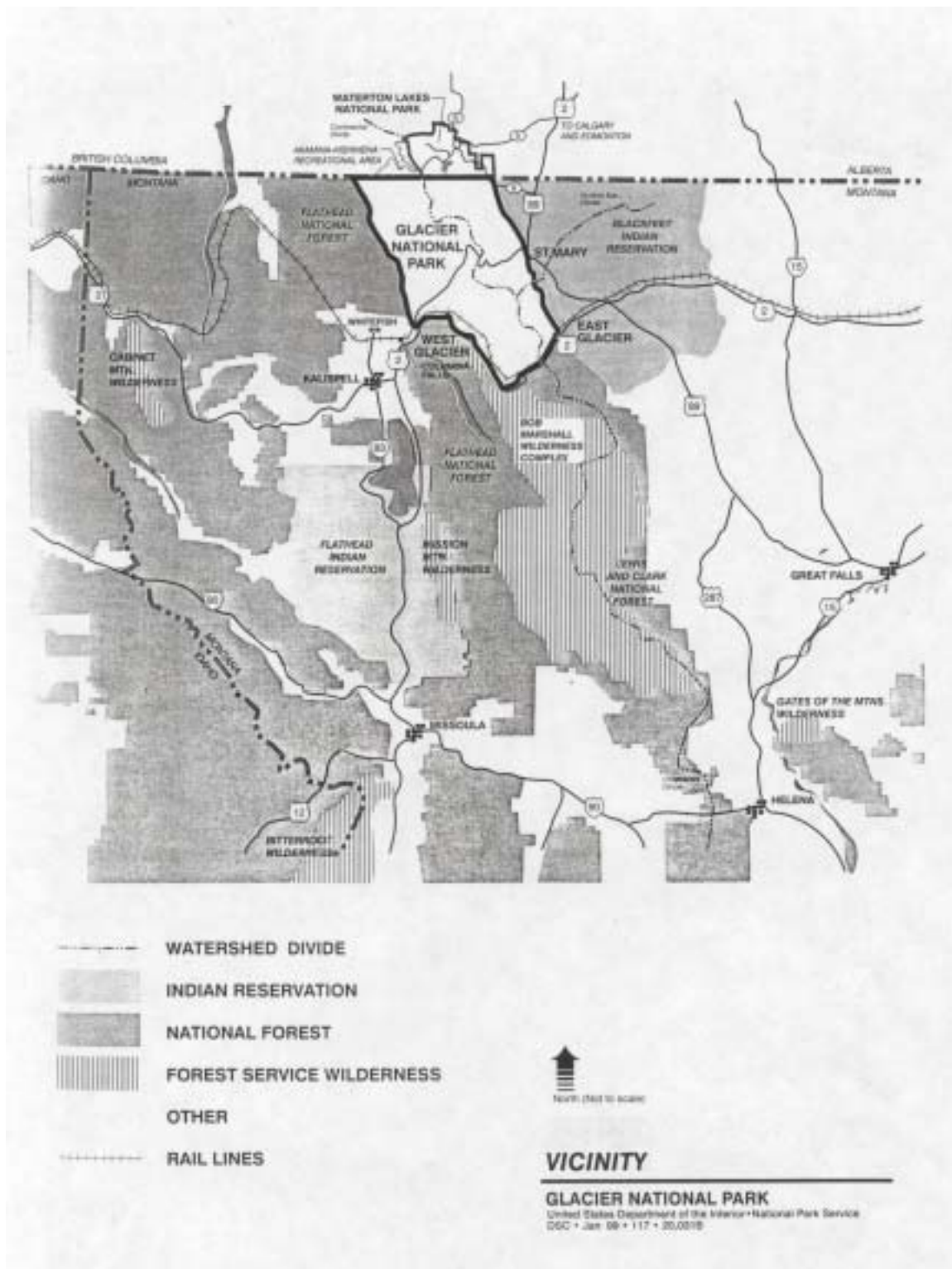
Prime and Unique Farmlands: In 1980, the Council on Environmental Quality (CEQ) directed that Federal Agencies must assess the effects of their actions on farmland soils classified by the U.S. Department of Agriculture's Natural Resources Conservation Service (NRCS) as prime or

unique. There are no “prime or unique farmlands” in Glacier National Park (General Management Plan, 1999). Therefore, this topic was dismissed from further consideration in this EA.

Environmental Justice: Executive Order 12898, “General Actions to Address Environmental Justice in Minority Populations and Low Income Populations,” requires all federal agencies to incorporate environmental justice into their mission. Under Alternative B, this project would not have disproportionate health or environmental effects on minorities or low-income populations or communities as defined in the Environmental Protection Agency’s Environmental Guidance (1998) because access to the park would be maintained for the public. Under Alternative A, the bridge would remain closed to everyone, therefore it would not have a disproportionate health or environmental effect on minorities or low income populations or communities.

Archeological and Ethnographic Resources: Dr. Brian Reeve’s archeological survey of the area during the 1995 field season found no archeological resources in the headquarters area. Lack of archaeological evidence in the area of the Middle Fork of the Flathead and its tributaries suggests infrequent use of the southern portion of GNP in prehistoric times. An ethnographic overview of Glacier National Park was completed in 2001. The study identified no resources in the GNP headquarters area. The Blackfeet and the Confederated Salish and Kootenai Tribes have not raised concerns over this project.

Figure 1. Project vicinity.



ALTERNATIVES INCLUDING THE PREFERRED ALTERNATIVE

This section describes the alternative actions and summarizes the impacts of the alternatives. Two alternatives were identified for further evaluation as part of the environmental assessment.

Alternative A: Do not rehabilitate the Belton Bridge (No Action).

Under the No Action alternative, the National Park Service would not make improvements to the bridge. The Belton entrance road from the GNP headquarters area to the boundary trailhead would continue to be maintained as a trail but not re-surfaced. Eventually the bridge would become a safety hazard to river users and would be removed.

Alternative B: Rehabilitate the Belton Bridge (Preferred Alternative).

Includes removal of the existing timber trestle bents, decking, and guardrails, rehabilitation of the concrete arch, and replacement of the bents, decking, and guardrails with new materials. Surface the Belton Entrance Road Trail.

The following would be activities associated with the proposed rehabilitation of the Belton Bridge:

- **Demolition of the Existing Timber Bridge.** The contractor would submit a demolition plan for approval prior to beginning removal. The plan would address the proposed method of removal and any measures that would be taken to prevent debris from entering the river. Methods the contractor could use may include installing debris netting or platforms under the bridge to capture any material that falls. Using a crane to remove the timber structure from both sides of the river. Silt fencing would be used along the Belton Entrance Road Trail to prevent sediment from entering the river during construction activities. Removal of the bridge is expected to take one to two weeks. For safety reasons during demolition work, temporary delays on rafting and stream use in the vicinity of the bridge structure may occur. Public notice to local news organizations and rafting outfitters and the installation of signing along the river would be provided.
- **Arch Rehabilitation.** This work would entail chipping away any loose or unsound concrete back to intact and sound material. The voids would then be patched with masonry material to provide a uniform surfacing. The concrete pedestals, currently cast into the top of the arch rib, are to be removed and replaced. If the patching creates a mottled coloration of the surface, a final coating of a concrete stain or other method may be applied.
- **Construction of Timber Structure and Decking.** All existing timber components would be replaced with new timber. The replacement timber post bents would match the existing construction thus replicating the rhythm and look of the existing timber bridge. All visible fasteners would be galvanized (dull gray) or malleable iron (black). The decking would be a longitudinally glue laminated timber deck similar to what was used on the

Quarter Circle Bridge replacement nearby in the park. The existing timber stringers that currently support the plank deck would be eliminated. The load capacity would permit vehicle usage of the bridge in emergency circumstances. All of the structural timber would be treated with copper naphthenate preservative (does not contain arsenic; copper naphthenate treated wood was used on the recently completed Quarter Circle Bridge). This treatment would slightly darken the timber. Beyond this, there are no other treatments or finishes that would be applied to the timber.

- **Metal Railing and Guardrail Terminus.** The new bridge railing would be metal and, in silhouette, similar to the original 1920 concrete structure's guardrail. This railing would extend beyond the deck onto the elevated approaches on both ends of the bridge. The railing would be finished in a dark brown color. Concrete guardrail sections replicating the 1920 design crenellations would terminate the railing system.
- **Trail Rehabilitation.** Heavy hauling and equipment transport would take place on the existing trail/road bed. Upon completion of the bridge work, grading may occur if necessary and a 4-inch deep, 10-foot wide compacted aggregate surface would be placed on the prepared road bed to better facilitate pedestrian and bicycle use.

The Belton Entrance Road Trail is approximately 2600 linear feet long. Approximately 4 inches of crushed rock aggregate would be placed on the trail for a final 10-foot-wide surface treatment. This would require approximately 2900 square yards of aggregate material. Through this, a more stable and finished surface would be provided for pedestrians and bicyclists. While it is not the intent to reconstruct the historic road, the increased width over that of a typical path is proposed so that the appearance of the historic road is maintained.

Following the completion of the proposed phase II rehabilitation work and prior to placing the aggregate surface, the existing vertical stone abutment would be "faced" with horizontally laid stone, thereby provided additional mass and buttressing to the existing slope. To minimize excavation into the existing slope, the stone would project farther onto the road bench than the temporary measure.

Mitigation Measures

Under Section 106 of the National Historic Preservation Act, GNP has proposed interpretation of the bridge to mitigate the adverse effect of the project on a National Register-eligible property. A draft Memorandum of Agreement has received approval of the State Historic Preservation Officer (Appendix A.). The wayside exhibit would interpret the original entrance road and adjacent area, and the bridge and its evolutionary past, and the effect of the 1964 flood. A second wayside exhibit would provide information about the Boundary Trail, including regulations for its use.

Because the proposed work is within previous disturbed areas, there is little chance of affecting previously unidentified archeological resources. However, in the event previously unidentified archeological resources are discovered, all work in the immediate vicinity of the discovery would be halted until the resources could be identified and documented and an appropriate mitigation

strategy developed in consultation with the Montana State Historic Preservation Officer and the appropriate Tribes.

Construction would not begin until after the middle of September to avoid affects to bull trout during spawning and migration to tributaries along the Middle Fork of the Flathead River. This would also avoid delays to rafters and outfitters during the main commercial rafting season.

Contract specifications would require only short-term delays for rafters and outfitters floating the river in this area.

All equipment would be steam cleaned of mud and weed seed prior to entering the project area.

No vehicles that are leaking oil or anti-freeze would be allowed in the project area and no vehicle storage would take place on site.

Vehicles or equipment would not be permitted outside the work limits or on topsoil areas.

No explosive materials would be used.

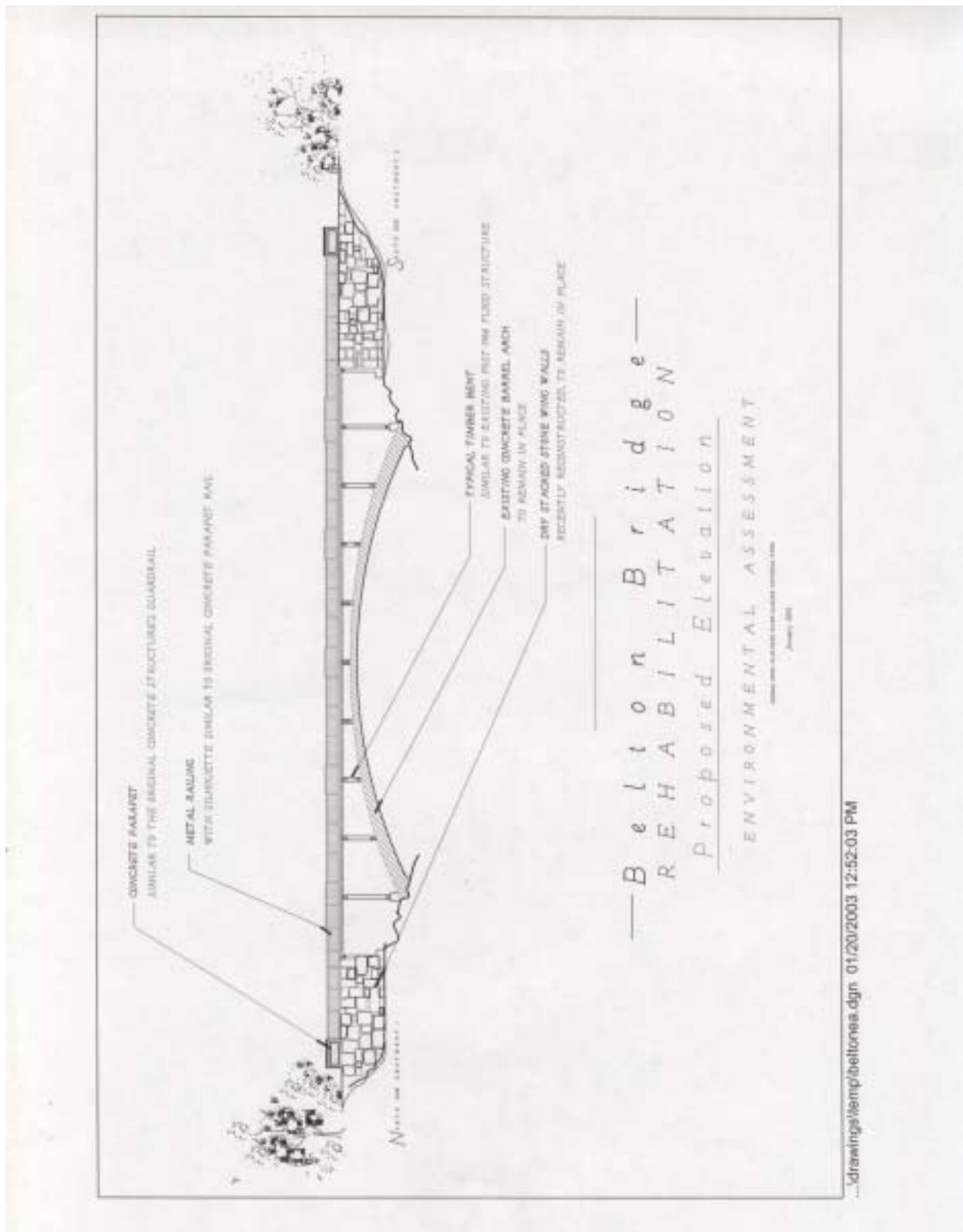
No draining of oil, hydraulic fluids, anti-freeze, or other chemicals allowed in areas not approved by NPS.

No feeding or disturbance of wildlife permitted.

All construction debris would be removed from the project area.

Silt fencing would be used in accordance with best management practices to protect water quality.

Figure 2. Project design schematic.



The structural design, provision of plans and specifications, award of the contract, and the contract administration would be all carried out by the Federal Highway Administration. Construction activity is expected to occur between mid-September 2003 and April 2004.

Alternatives Considered but Eliminated from Detailed Study

No other alternatives were considered because the first Environmental Assessment and Finding of No Significant Impact, and subsequent completion of phase I committed the National Park Service to rehabilitation of the bridge. The only other option is to allow it to deteriorate which is addressed under No Action.

Issues Beyond the Scope of this Environmental Assessment

The issue of the bank along the Belton Entrance Road Trail and its instability was raised prior to the first Belton Bridge EA and again during this EA. A geologist from the NPS Geological Resources Division performed a reconnaissance evaluation of the bank. The draft report concluded the slope is situated on glacial till deposits along a cutbank. The slope has experienced recurring failures and developed large gullies and rills. This site experiences higher velocities and therefore greater erosional forces due to the bedrock upstream from the site of the Belton Bridge. Slope erosion is due to the erosional forces from the river (outside bend of the river), and fluctuations in river levels and increased velocities. During snow melt, the river cuts away at the banks and toe material that supports the weight of the slope. These types of exposures occur elsewhere along the river. When the original entrance road was constructed, this exacerbated the slope condition. The slide area now averages a slope of approximately 70 percent. Reducing the slope to 50 percent would help to stabilize it. Re-contouring the slope, although clearly an ameliorating action, is outside the scope of this project and there are not enough funds available to do both actions.

Table 1. Summary of Alternatives.

Alternative A - No Action	Alternative B – Preferred alternative
No new construction would occur. The bridge would remain closed to pedestrian, horse, and bicycle use, and would eventually fail and have to be removed.	The Belton Bridge would be rehabilitated and opened for pedestrian, horse, and bicycle use.
Normal trail maintenance would be performed.	The Belton Entrance Road Trail would be surfaced with gravel for pedestrian, horse, and bicycle use.

Table 2. Comparison of Impacts and Alternatives.

Impact Topic	Alternative A - No Action	Alternative B - Preferred
Water Resources	There would be no new direct impacts, and no cumulative impacts on water resources with Alternative A. If the bridge were to be removed in the future because of severe deterioration, silt fencing would be used and result in minor, localized, short-term, adverse effects on water resources from sediment.	Vehicular access and construction over the river from Alternative B would produce minor, localized, short-term, adverse impacts from erosion and sediment. There would be no cumulative impacts.
Wildlife	There would be no new direct impacts, and no cumulative impacts on wildlife with Alternative A. The affects of removing the bridge in the future would be minor, localized, short-term, adverse impacts due to disturbance from people and equipment, and there would be minor, localized, long-term, beneficial impacts from reducing human disturbance in the area after bridge removal.	Construction activities proposed in Alternative B would produce minor, localized, short-term, adverse impacts on wildlife due to increased noise, equipment, and vehicles not normally present in the river corridor. Cumulative impacts would be moderate, localized, long-term, and adverse due to disturbance from concurrent construction and fuel reduction activities in the area.
Threatened and Endangered Species and Species of Concern	There would be no new direct impacts, and no cumulative impacts on threatened and endangered species and species of concern with Alternative A. Removing the bridge would have minor, localized, adverse, short-term impacts on wildlife. The effects of removing the bridge would be minor, localized, long-term, beneficial impacts by reducing human disturbance in the area.	Alternative B would have no effect on gray wolf, Canada lynx, marten, fisher, wolverine, trumpeter swan, peregrine falcon, harlequin duck, osprey, Cooper's hawk, northern pygmy owl, or northern saw-whet owl. Alternative B would produce negligible to minor, localized, short-term, adverse impacts on bald eagle, grizzly bear, northern goshawk, barred owl, and pileated woodpecker. Bull trout would not likely experience adverse impacts. There would be negligible effects on westslope cutthroat trout. There would be minor, localized, short-term, adverse cumulative effects to bald eagle, grizzly bear, northern goshawk, barred owl, and pileated woodpecker, due to concurrent projects in the vicinity.
Historic Structures	A decision to allow the Belton Bridge to deteriorate would produce site-specific,	Replacing all wooden members of the Belton Bridge is not consistent with the

	long-term, moderate, adverse impacts. A finding of adverse effect under Section 106 of the National Historic Preservation Act would result.	Secretary of the Interior's Standards for the Treatment of Historic Properties. Rehabilitation would produce site-specific, long-term, moderate, adverse impacts to historical resources. A finding of adverse effect under Section 106 of the National Historic Preservation Act would result. The park is proposing to mitigate the adverse effect by installing an exhibit onsite that explains the historic significance to the public.
Visitor Use and Experience	There would be no new impacts in the short-term. Collapse or removal of the bridge in the future could result in a moderate, short-term, localized, adverse effect.	Closure of the river for safety reasons during construction activities would result in minor, short-term, localized, adverse effects. Once the trail would be re-opened to hikers and bicyclists and result in moderate, beneficial, long-term, localized impacts.
Park Operations	There would be no new impacts in the short-term. Collapse or removal of the bridge in the future could result in a minor, short-term, localized, adverse effect.	Additional cyclical maintenance costs from Alternative B would result in minor, long-term, localized, adverse effects to park operations. Cumulative effects would be negligible to minor, localized, long-term and adverse.

Environmentally Preferred Alternative

The environmentally preferred alternative is determined by applying the criteria suggested in the National Environmental Policy Act of 1969 (NEPA), which is guided by the Council on Environmental Quality (CEQ). The CEQ provides direction that the environmentally preferable alternative is the alternative that will promote the national environmental policy as expressed in NEPA Section 101:

- (1) fulfill the responsibilities of each generation as trustee of the environment for succeeding generations;
- (2) assure for all generations safe, healthful, productive, and esthetically and culturally pleasing surroundings;
- (3) attain the widest range of beneficial uses of the environment without degradation, risk of health or safety, or other undesirable and unintended consequences;
- (4) preserve important historic, cultural and natural aspects of our national heritage and maintain, wherever possible, an environment that supports diversity and variety of individual choice;
- (5) achieve a balance between population and resource use that will permit high standards of living and a wide sharing of life's amenities; and
- (6) enhance the quality of renewable resources and approach the maximum attainable recycling of depletable resources.

Goal 1 could be met by both alternatives, but would best be achieved by Alternative B, which would address the deteriorated condition of the bridge immediately. Goal 2 would best be

fulfilled by Alternative B as it would provide safer conditions for visitors and employees while providing aesthetically and culturally pleasing surroundings. Alternative A causes the least degree of environmental degradation in the short-term, but Alternative B provides a better range of beneficial use by improving safety and lowering the risk of undesirable consequences; thus Alternative B would better accomplish Goal 3. Alternative A best meets Goal 4's preservation of cultural aspects in the short-term since the bridge would remain standing for an undetermined period of time, however, it would continue to be closed to foot and bicycle traffic, limiting the variety of individual choice and eventually would be removed or it would collapse. Alternative B best meets Goal 4's preservation of natural aspects since the deteriorated bridge would be rehabilitated, reducing the potential for unexpected impacts on the river. Alternative B also would provide a variety of individual choice. The graveling of the path under Alternative B would best meet Goal 5 by providing a better balance between population and resource use. Neither of the alternatives meet Goal 6.

Overall, Alternative B would achieve more of the goals than Alternative A. Thus Alternative B is the environmentally preferred alternative.

AFFECTED ENVIRONMENT

Natural Resources

Water Resources

The Apgar/GNP headquarters area is bordered by Lake McDonald to the north, Lower McDonald Creek to the west, and the Middle Fork of the Flathead River to the south. Lower McDonald Creek is the outlet of Lake McDonald. Water flows from the lake to the Middle Fork of the Flathead River.

The Middle Fork of the Flathead drains a watershed of about 1,128 square miles, most of it mountains. The headwaters of the Middle Fork are on the west side of the Rocky Mountain Front Range in the Bob Marshall and Great Bear Wilderness areas. The Middle Fork is approximately 100 miles long and has the steepest gradient of the three forks of the Flathead River. Much of the river above the town of Essex flows through steep-walled valleys. Below Essex the river is characterized by broad valley, glaciated river bottoms. Steepened slopes along the river and its tributaries provide sources of sediment. Natural geologic erosion is high and is accelerated during severe floods.

In winter a heavy accumulation of snow insulates the ground, preventing deep freezing and allowing the soil mantle to become completely water-recharged by mid winter. In spring the saturated soil mantle, heavy snowpack accumulation, rapid snowmelt rates, and rains can combine to produce floods. Portions of the project area occasionally flood, as evidenced by the patterns of vegetation along the Middle Fork. Stream flow varies seasonally, generally peaks during the early summer and is lowest during the winter (USGS 2000). The 50-year peak flow estimate for the Middle Fork of the Flathead River is 1,765 cubic meters per second. The proposed project is within the floodplain of the river according to the 1964 flood of record.

Wildlife

The Belton Bridge and Belton Entrance Road Trail are within a mixed conifer forest with some riparian plant species that provide for a variety of wildlife species. Wildlife found in the area include a variety of small mammals (shrews, voles, deer mice, etc.), carnivores (mountain lion, black bear, coyote, river otter, marten, etc.), snowshoe hare, beaver, muskrat, red squirrel, white-tailed deer, mule deer, elk, and moose.

The project area is part of a white-tailed deer winter range that extends from the Apgar-headquarters area along the north side of the river to the south slopes of the Belton Hills to the north and east. Some white-tailed deer remain in the area year-round, including the spring when they give birth to fawns, and others move through the area between winter and summer ranges. Mule deer also move through the area to and from the winter range on the Belton Hills, but are usually not found in the project area during the summer. The Belton Hills northeast of the project is also important elk winter range, and an elk calving area during May and June. Coyotes and mountain lions prey on deer and elk throughout the year, but especially during the winter and spring when they seek winter-weakened animals and newborn deer fawns or elk calves.

Black bears may also forage and travel through the area. Tracks of fisher and wolverines have been observed in the area and other mammals such as marten, short-tailed weasel, long-tailed weasel, and an occasional least weasel or striped skunk may also be present.

A wide variety of water birds such as great-blue herons, Canada geese, harlequin ducks, common mergansers, bufflehead, common goldeneye, Barrows goldeneye, killdeer, spotted sandpiper, and American dipper use the river and riparian habitat.

Adjacent forests and meadows support a large number of Columbian ground squirrels, which in turn support a variety of predators, including coyotes, barred owls, northern goshawks, red-tailed hawks, and other raptors. Sharp-shinned hawks and Coopers hawks have been observed in the area during migration. Other raptors likely present in the vicinity include osprey, red-tailed hawk, northern pygmy owl, northern saw-whet owl, and great-horned owl.

Common ravens, common crows, black-billed magpies, Steller's jays, gray jays, pileated, hairy, and downy woodpeckers and an abundance of songbirds nest and forage in the varied habitats adjacent to the project area. Habitats with highest diversity include the riparian zone of cottonwoods, willows, hawthorn and other deciduous shrubs.

Threatened and Endangered Species and Species of Concern

Federally listed threatened or endangered, and state listed species of concern are found throughout the park. The U.S. Fish and Wildlife Service was contacted by letter on February 3, 2003, to confirm the listed species present in Glacier National Park. Below is a discussion of these species in the project area.

Bald eagle: The bald eagle is listed as “threatened” under the Endangered Species Act. Bald eagles are both year-round residents and seasonal visitors to the Park. They use the Middle Fork of the Flathead River where they forage for fish and carrion. Bald eagle use of the area increases during migration (primarily March–April and October–November), and is highest during winter. Bald eagles forage for fish from tree perches or by flying along the river.

Grizzly bear: The grizzly bear is listed as “threatened” under the Endangered Species Act. Grizzly bears inhabit the area during spring, summer, and fall, foraging on carrion, herbaceous vegetation and fruits, especially huckleberries. Seasonal movements and habitat use are tied to the availability of different food sources. In the spring they feed on dead ungulates and herbaceous vegetation at lower elevations. During the summer some bears move to higher elevations in search of berries, glacier lilies, roots, and in some cases army cutworm moths (White et al. 1998). Lands adjacent to the project area provide foraging habitat for grizzly bears primarily during the spring and summer and to a lesser extent during the fall. There are no known den sites in the project area. Grizzlies are probably attracted to the project area in the spring because of the succulent herbaceous vegetation along the river corridor. Huckleberries attract bears to the area in late July and August.

Canada lynx: The Canada lynx is listed as “threatened” under the Endangered Species Act. Lynx habitat generally is described as climax boreal forest with a dense undercover of thickets and windfalls (Ruediger et al. 2000). Advanced successional stages of forests and dense conifer stands often are preferred habitats of lynx for denning and foraging respectively. Lynx generally forage in young conifer forests especially where their primary prey, snowshoe hare (*Lepus americanus*), is abundant. Ongoing research in Montana (J. Squires, pers. comm.) has documented the importance of some mature high elevation spruce-fir forests to lynx. They not only provide denning habitat but some spruce-fir stands are also foraging habitat, especially during winter, with stable and relatively high densities of snowshoe hares. Other prey includes squirrels, grouse, martens, and voles. Lynx are most susceptible to disturbance during the denning period and while newborns are developing (April–August) (Ruediger et al. 2000).

Information on lynx distribution in Glacier is lacking, and though no research or surveys have been conducted in the immediate project area, lynx tracks have been observed during the winter. Mature conifer forest and riparian habitat near the project area provide habitat for snowshoe hares, the lynx’s principal prey, as well as other secondary prey species. Mature conifer forest near the site also provides attributes of lynx denning habitat including large amounts of woody debris. However, a preliminary map of lynx habitat in Glacier defined mesic (moist) conifer forest above 4000 feet elevation as the most likely areas supporting lynx. Since little is known about lynx habitat use in Glacier these criteria are general in nature. Because the project site is approximately 3200 feet in elevation, these criteria suggest the area may not provide suitable lynx habitat.

Gray wolf: The gray wolf is listed as “endangered” under the Endangered Species Act. Tracks of wolves have occasionally been found in the headquarters area, but their activity appears to be limited. Since wolves became naturally reestablished in GNP nearly 20 years ago, activity has been focused on the North Fork Valley, with only sporadic travel through the headquarters area, mostly in the winter. During the winter of 2000–2001, a few wolves in one pack made increasing use of the area north of headquarters for travel and presumably hunting. Status of the nearest wolf pack, called the Apgar Pack, is uncertain. Denning of this pack in recent years occurred several miles to the north of the project, but little activity has been noted in that area since early

2002. White-tailed deer, mule deer, elk calves in the spring, and other small prey may attract wolves to the area. There are no known den sites or recent pack activity near the project area.

Bull trout: The bull trout is listed as “Threatened” under the Endangered Species Act. Bull trout require habitats offering cold summer water temperatures, complex large woody debris accumulations, and clean cobble and boulder substrates (Rieman and McIntyre, 1993; Rich, 1996). Water temperatures greater than 15 C (approximately 60 F) are believed to limit bull trout distribution (Fraley and Shepard, 1989). As a general rule, the colder the summer water temperature, the better the habitat for bull trout. However, recent studies in the Klamath Basin, Oregon, found adult bull trout present at summer maximum temperatures of 20 C (J. Light and D. Buchanan, Weyerhaeuser and Oregon Department of Fish and Wildlife, Corvallis, OR, unpublished data). Other Montana studies found sub-adult bull trout in water temperatures of 4 to 19 C (C. Frissell, U of M, Missoula, personal communication.). Clancy (1996) demonstrated a strong relationship between bull trout presence and cold summer water temperatures throughout the Bitterroot National Forest. Bull trout have two different life history forms that occur in the river at this location, resident (riverine) and migratory (Goetz, 1989). Resident populations usually spend their entire lives in small headwater streams, whereas migratory forms are born and reared in small tributary streams for several years before migrating into larger rivers (fluvial) or lakes (adfluvial).

Bull trout begin their spawning migration from Flathead Lake in April, arriving in the Middle Fork of the Flathead River in June and July. They remain at the mouths of the spawning tributaries for two to four weeks, entering the tributaries from July through September. Emigration of juveniles from tributaries into the river system occurs from June through August. They move rapidly downstream, arriving in the mainstem of the Flathead River below the confluence with the South Fork during August and September (Fraley and Shepard 1989).

Historically, bull trout were one of four native salmonid species distributed throughout the Flathead drainage. They co-existed with westslope cutthroat trout (*Oncorhynchus clarki lewisi*), pygmy whitefish (*Prosopium coulteri*), and mountain whitefish (*P. williamsoni*) (Brown 1971). The Flathead Lake bull trout population colonized all three forks of the Flathead River, the Swan River, the Stillwater and Whitefish Rivers, and the Lower Flathead River.

Monitoring data in 1992, 1993, and 1994 spawning runs from Flathead Lake were the lowest on record and led to the listing of the bull trout. These recent declines in the spawning population of bull trout in virtually all monitored streams throughout the North and Middle Forks of the Flathead River indicate that changes in the system are the primary threat to bull trout at this time. Establishment of opossum shrimp (*Mysis relicta*) and the proliferation of predatory non-native lake trout no doubt play a key role in this decline, but complex mechanisms involving bull trout prey species or behavioral interactions with lake trout may also be involved. (Flathead River Drainage Bull Trout Status Report, August 1995).

In the “Flathead River Drainage Bull Trout Status Report” it was noted that the most important bull trout spawning streams in the Middle Fork drainage in GNP were Nyack, Park, and Ole Creeks. These creeks have been closed to fishing since the early 1980s to protect bull trout and cutthroat trout spawning areas. Other Middle Fork spawning streams outside GNP include Bear, Long, Granite, Morrison, Lodgepole, Schafer, Dolly Varden, Clack, Bowl, Trail and Strawberry Creeks.

Westslope Cutthroat Trout: The westslope cutthroat trout is under consideration for listing by the U.S. Fish and Wildlife Service. Westslope cutthroat trout (*Oncorhynchus clarki lewisi*) in the Flathead drainage may be adfluvial, fluvial, or resident. Adfluvial fish occupy large lakes in the Upper Columbia drainage and spawn in tributaries. Fluvial fish reside in rivers instead of lakes and utilize tributaries for spawning (i.e. Flathead River). Most adults return to the river or lake after spawning. Resident fish complete their life history in tributary streams. All three life history forms may occur in a single basin.

Westslope cutthroat trout typically spawn at age 4 or 5. Sexually mature adfluvial fish move into the vicinity of tributaries in fall and winter where they stage before beginning their spring migration into spawning streams. They spawn from March to July at water temperatures near 10 C (Shepard et al. 1984). Alternate year spawning has been reported in the Flathead River Basin in Montana (Shepard et al. 1984). Cutthroat trout are thought to spawn mainly in small first and second order tributaries. Migratory forms may spawn in the lower reaches of streams used by resident fish. Headwater reaches of large river basins like the Flathead are typically dominated by resident and fluvial forms, but tributaries to lakes also support adfluvial fish. Most migratory cutthroat rear in tributary streams for two to three years before emigrating during June or July. The Middle Fork of the Flathead River drainage downstream of the Wilderness contains mostly adfluvial cutthroat (Fraley et al. 1989).

Westslope cutthroat trout prefer cold, nutrient poor waters. Growth rates vary widely but are probably strongly influenced by overall aquatic habitat productivity. Spawning habitat has been characterized as gravel substrates with particle sizes ranging from 2 to 75 mm, mean depths ranging from 17 to 20 cm, and mean velocities between 0.3 and 0.4 m/s (Shepard et al. 1984). (“Conservation Assessment for Inland Cutthroat Trout”, USDA, General Technical Report RM-GTR-256.)

The Montana Natural Heritage Program has classified 32 state rare wildlife species with potential occurrence in the park. Several of these species may be present or use habitat in the vicinity of the project area. These species are listed below:

Marten, fisher, and wolverine: These species have been seen in the vicinity and may use habitat near the project area. The wolverine is also under consideration for listing by the US Fish and Wildlife Service.

Trumpeter swans: Trumpeter swans are rare migrants to the park in the spring and fall that may use habitat along the Middle Fork.

Peregrine falcon: The U.S. Fish and Wildlife Service removed the peregrine falcon from the list of threatened and endangered species in 1999. Although no longer endangered, peregrine falcons, their eggs, parts, and nests would continue to be protected from unauthorized killing, possession, transportation, and importation by the Migratory Bird Treaty Act. Peregrine falcons are not known to nest in the park, though are occasionally reported during migration periods and the summer.

Harlequin duck: Harlequin ducks are common breeding residents from spring to fall in the park where they forage in fast moving streams. Breeding habitat includes the McDonald Creek drainage. Their use of McDonald Creek is from late April to mid-September, with most use declining during August and September. Observations on the river in the project area are primarily during spring and late summer.

Osprey: Osprey are fairly common from spring through fall along rivers and lakes in the park and may use habitat in the project area.

Northern goshawk: Northern goshawks have nested in mature conifer forest within ¼-mile of the project area, and forage throughout the project and headquarters area.

Cooper's hawk: Cooper's hawks are uncommon from spring to fall in forested areas. They have been observed near the project area primarily during migration.

Northern pygmy owl: Northern pygmy owls are fairly common year-round residents in the park and may use habitat near the project area.

Barred owl: Barred owls have nested in mature conifer forest within ¼-mile of the project area.

Northern saw-whet owl: Northern saw-whet owls are uncommon residents in conifer or mixed forests that may be found in the project area.

Pileated woodpecker: Pileated woodpeckers are fairly common in the park in mature forest areas and have nested within ¼-mile of the project area.

HISTORIC STRUCTURES

Background

Early humans have utilized the area known as Glacier National Park for the last 10,000 years. Two culture areas dominated prehistoric utilization of the area, one of the Northern Plains and one of the Columbia Plateau. In late prehistoric and early historic times, the region was used predominately by the Kootenai, Pend d'Oreille, and Blackfeet Indians. Archeological evidence indicates seasonal use of the park areas for hunting, fishing, and plant harvesting. Early peoples also used some valleys and mountain passes as travel corridors through the rugged terrain.

Little documented history of the area exists prior to the late 1800s. The fur trade initiated exploration of the area and other expeditions and surveys followed in the latter half of the century. It was not until 1889 and 1890, with the surveys for the Great Northern Railway, that attention focused on the Apgar/West Glacier area. Construction of the railroad in 1891 opened the eras of homestead settlement, mineral exploitation, and tourism simultaneously.

Local residents constructed a rough wagon road to the foot of Lake McDonald in the early 1890s, but crossed the Middle Fork of the Flathead River in boats, until a log bridge was constructed across the river in 1897. The log bridge, subject to flooding and structural problems, was repaired several times over the course of the next twenty years.

With the establishment of Glacier National Park in May 1910, park administrators initiated infrastructure development including buildings, roads, and trails with which to serve staff and visitors, and protect park resources. Early facilities included the development of a road system and the establishment of a park headquarters area. In his 1911 annual report, Superintendent William Logan recommended a new bridge to be constructed. Increased park visitation, local road construction, and a new headquarters complex, along with repeated bridge repairs throughout the decade, drove the request.

The National Park Service finally approved funding for a new bridge in 1920. The request for bids included structural specifications, but left the final design up to the contractors. Charles A.

McClung, a Spokane, Washington civil engineer and bridge contractor, submitted the low bid of \$10,200 based on a design likely provided by B.J. Garrett, the city of Spokane's bridge engineer. The park accepted McClung's contingency that it provide sand, gravel, and lumber for the project. The new concrete arch bridge, built on natural rock outcroppings along the river, was completed November 30, 1920. The Belton Entrance Road, along with the park's other main roads, was first oiled and graveled in 1931.

The construction of a vehicular underpass under the Great Northern tracks from U.S. Highway 2 in 1936 was followed by a new Middle Fork bridge in 1938. The 1936 and 1938 structures formed the basis for a new entrance into the park and a road that skirted the headquarters area. The Belton Bridge and the short entrance road from the bridge to park headquarters were abandoned.

The worst flooding in Montana's recorded history occurred after heavy rains on June 7 and 8, 1964. The flood is now considered to have been a 500-year event with peak runoffs ranging from two to 11.5 times what was then considered a 50-year flood. The flood killed 30 people and injured another 350, resulted in the evacuation of 8,700 people, and caused \$55 million (1964 dollars) in property damage. Several Montana counties were declared federal disaster areas. Within GNP, the flood isolated the park from the outside world and threatened to wreak havoc with the area's tourism-dependent economy. Damage to the park's infrastructure was estimated at nearly \$4 million.

The flood destroyed the 1938 bridge downstream from the Belton Bridge (along with all Flathead River bridges between Columbia Falls and Marias Pass). During the flood, the abandoned Belton Bridge was completely covered with water. Much to everyone's surprise, as the waters receded, they revealed that the concrete arch remained, although the superstructure had been washed away. With the park completely isolated, a contract was awarded to the Matelich Construction Company of Kalispell for a timber trestle system atop the arch. Less than three weeks later, on June 25, 1964, the "new" bridge carried its first vehicle.

The Belton Bridge again served as the access into the park until mid-summer 1966, when a replacement bridge was completed at the 1938 bridge site. Though some maintenance and repair work has been conducted since the Belton Bridge's reconstruction in 1964, deterioration of the bridge's timbers led to its closure, first to vehicular traffic and then to pedestrians.

Description and Significance

The Belton Bridge has been determined eligible for listing in the National Register of Historic Places (October 2002). The bridge, although less than 50 years old, meets National Register Criteria Consideration G for properties that have achieved significance within the last 50 years. The bridge is the best physical representation of the devastation caused by the 1964 flood and the urgent push to reopen the park for the 1964 tourist season.

The Belton Entrance Road has not been formally evaluated for the National Register of Historic Places, but GNP has determined that it is significant for its association with early transportation networks in the park and as a relatively intact example of early road construction. Under the *Programmatic Agreement among the National Park Service (Glacier National Park), the Advisory Council on Historic Preservation, and the Montana State Historic Preservation Officer*

for Management of Historic Properties in Glacier National Park, unevaluated buildings and structures 40 years and older are considered eligible for purposes of maintenance work.

VISITOR USE AND EXPERIENCE

Four commercial rafting companies and many recreational floaters use the Middle Fork of the Flathead River. May through the middle of September is the typical season for floating on this reach of the river with the main commercial rafting season being June 20 through August 20.

Hikers use the Belton Bridge to access popular trails along the Middle Fork of the Flathead River. The Belton Entrance Road Trail is also the western portion of the Boundary Trail. This portion of the trail and the bridge are used by many local residents as a hiking and bicycle crossing between the town of West Glacier and Glacier National Park headquarters.

PARK OPERATIONS

Prior to the closure, the park maintenance staff had, on several occasions, conducted repairs to the bridge to ensure public safety. The bridge's timber support system and timber decking have finally deteriorated to the point where it is unsafe for pedestrians. The bridge was closed to public use in 2000. Regular trail maintenance occurs on the Belton Entrance Road Trail.

ENVIRONMENTAL CONSEQUENCES

The effects of each alternative are assessed for direct, indirect, and cumulative impacts on selected natural and cultural resources and other resources. Impacts are described in terms of intensity (negligible, minor, moderate, or major), context (site specific, local, and/or regional effects), duration (short-term or long-term), and type (adverse, beneficial). The thresholds of change for intensity of an impact are defined in Table 3. Impacts to federally listed threatened and endangered species have been described in accordance with the Endangered Species Act. The impact analysis for historic structures contains the information needed for a finding of effect in accordance with Section 106 of the National Historic Preservation Act.

The fundamental purpose of the National Park System, established by the Organic Act and reaffirmed by the General Authorities Act, as amended, begins with a mandate to conserve park resources and values. National Park Service managers must always seek ways to avoid or to minimize to the greatest degree practicable, adverse impacts on park resources and values. However, the laws give the National Park Service the management discretion to allow impacts to park resources and values when necessary and appropriate to fulfill the purposes of a park, as long as the impact does not constitute impairment of the affected resources and values. Although Congress has given the National Park Service the management discretion to allow certain impacts within parks, that discretion is limited by the statutory requirement that the National

Park Service must leave park resources and values unimpaired, unless a particular law directly and specifically provides otherwise.

The prohibited impairment is an impact that would harm the integrity of the park resources or values, including the opportunities that otherwise would be present for the enjoyment of those resources or values. An impact to any park resource or value may constitute an impairment. An impact would be more likely to constitute an impairment to the extent it affects a resource or value whose conservation is:

- necessary to fulfill specific purposes identified in the establishing legislation or proclamation of the park;
- key to the natural or cultural integrity of the park or to opportunities for enjoyment of the park; or
- identified as a goal in the park's general management plan or other relevant NPS planning document.

Impairment may result from National Park Service activities in managing the park, visitor activities, or activities undertaken by concessionaires, contractors, and others operating the park. A determination on impairment is made in the *Environmental Consequences* section for each impact topic.

Cumulative Impacts

The Council of Environmental Quality (CEQ) regulations, which implement the National Environmental Policy Act, requires assessment of cumulative impacts in the decision making process for federal projects. Cumulative impacts are defined as “the impact on the environment,” which results from the incremental impact of the action when added to other past, present, and reasonable foreseeable future actions regardless of what agency (federal or non-federal) or person undertakes such other actions (40 CFR 1508.7). Cumulative impacts are considered for all alternatives.

Cumulative impacts are determined by combining the impacts of the preferred alternative with other past, present, and reasonably foreseeable future actions. Therefore it was necessary to identify other ongoing or reasonably foreseeable future actions within Glacier National Park and, if applicable, the surrounding region. The following is a list of past, present and reasonable foreseeable future actions that have occurred, are planned and could occur in the vicinity of the Belton Bridge area and would result in a cumulative impact.

- Quarter Circle Bridge repair 2000
- Essex Bridge replacement 2001-02
- Construction of museum storage facility at Headquarters 2002
- Rehabilitate the Rubideau Spring water system 2003
- Construction of new sewage treatment facility 2003
- Mechanical fuel reduction in the Headquarters area 2003
- Construction of a wildland fire cache at GNP Headquarters (proposed)
- Demolition of Graham and Roberts cabins on Lake McDonald (proposed)
- Demolition of Moberly cabin on Lake McDonald (proposed)

Table 3. Impact threshold definitions.

Impact Topic	Negligible	Minor	Moderate	Major	Duration
Water Resources	Neither would be affected, or changes would be either non-detectable or if detected, would have effects that would be considered slight and local.	Changes would be measurable, although the changes would be small and localized.	Changes in water quality or hydrology would be measurable but would be relatively local.	Changes would be readily measurable, would have substantial consequences, and would be noticed on a regional scale.	Short-term - Following treatment, recovery would take less than one year Long-term - Following treatment, recovery would take longer than one year
Wildlife	Neither would be affected or the effects would be at or below the level of detection, and the changes would be so slight that they would not be of any measurable or perceptible consequence to the species' population.	Effects would be detectable, although the effects would be localized, and would be small and of little consequence to the species' population.	Effects would be readily detectable and localized, with consequences at the population level.	Effects would be obvious, and would have substantial consequences to populations in the region..	Short-term - Recovers in less than one year Long-term - Takes more than one year to recover
Threatened and Endangered Species and Species of Concern	No federally listed species would be affected or the alternative would affect an individual of a listed species or its critical habitat, but the change would be so small that it would not be of any measurable or perceptible consequence to the protected individual or its population. Negligible effect would equate with a "no effect" determination in U.S. Fish and Wildlife Service terms.	The alternative would affect an individual(s) of a listed species or its critical habitat, but the change would be small. Minor effect would equate with a "may effect" determination in U.S. Fish and Wildlife Service terms and would be accompanied by a statement of "not likely to adversely affect" the species.	An individual or population of a listed species, or its critical habitat would be noticeably affected. The effect could consequence to the individual, population, or habitat. Moderate effect would equate with a "may effect" determination in U.S. Fish and Wildlife Service terms and would be accompanied by a statement of "likely... or not likely to adversely affect" the species.	An individual or population of a listed species, or its critical habitat, would adversely affect an individual, population, or habitat. Major effect would equate with a "may effect" determination in U.S. Fish and Wildlife Service terms and would be accompanied by a statement of "likely... or not likely to adversely affect" the species or critical habitat.	Short-term – Effects extend only through the period of the project. Long-term – Effects extend beyond the project period.

Impact Topic	Negligible	Minor	Moderate	Major	Duration
Historic Structures	Impact is at the lowest levels of detection - barely perceptible and not measurable. For purposes of Section 106, the determination of effect would be no adverse effect.	Treatment would affect the character defining features of a National Register of Historic Places eligible or listed property, but is in accordance with the Secretary of the Interior's <i>Standards</i> . For purposes of Section 106, the determination of effect would be no adverse effect.	Treatment would alter a character defining feature(s), diminishing the integrity of the resource to the extent that it is no longer eligible for listing in the National Register. For purposes of Section 106, the determination of effect would be adverse effect.	Impact would alter a character defining feature(s) of a National Historic Landmark, diminishing the integrity of the resource to the extent that its designation is threatened. For purposes of Section 106, the determination of effect would be adverse effect.	Short term—Effects extend only through the period of the project. Long term—Effects extend beyond the project.
Visitor Use and Experience	Visitors would not be affected or changes in visitor use and/or experience would be below or at the level of detection. The visitor would not likely be aware of the effects associated with the alternative.	Changes in visitor use and/or experience would be detectable, although the changes would be slight. The visitor would be aware of the effects associated with the alternative.	Changes in visitor use and/or experience would be readily apparent. The visitor would be aware of the effects associated with the alternative.	Changes in visitor use and/or experience would be readily apparent and have important consequences. The visitor would be aware of the effects associated with the alternative.	Short-term - occurs only during the treatment action Long-term - occurs after the treatment action
Park Operations	Park operations would not be affected, or the effects would be at low levels of detection and would not have an appreciable effect.	The effect would be detectable, but would be of a magnitude that would not have an appreciable effect on park operations.	The effects would be readily apparent, and would result in a substantial change in park operations in a manner noticeable to staff.	The effects would be readily apparent, would result in a substantial change in park operation in a manner noticeable to staff and be markedly different from existing operations.	Short-term - Effects lasting for the duration of the treatment action. Long-term - Effects lasting longer than the duration of the treatment action.

NATURAL RESOURCES

Water Resources

Effects of Alternative A: Do not Rehabilitate the Belton Bridge (No Action).

Impact Analysis: Under Alternative A, there would be no affect on water resources since no work would occur. If the bridge were to be removed in the future because of severe deterioration, silt fencing would be used and result in minor, localized, short-term adverse effects on water resources from sediment generated during the removal.

Cumulative Impact Analysis: Because there are no new impacts associated with the no action alternative, it would not contribute to impacts of other actions. Consequently, there would be no cumulative impacts under this alternative.

Conclusion: No direct impacts would occur to water resources under Alternative A. There would be minor indirect, localized, short-term adverse impacts from Alternative A. There would be no cumulative impacts.

Alternative A would not produce major adverse impacts on water resources whose conservation is (1) necessary to fulfill specific purposes identified in the establishing legislation of the park, (2) key to the natural or cultural integrity of the park or opportunities for enjoyment of the park, or (3) identified as a goal in the park's general management plan or other National Park Service planning documents. Consequently, there would be no impairment of water as a result of the implementation of Alternative A.

Effects of Alternative B: Rehabilitate the Belton Bridge (Preferred alternative).

Impact Analysis: Sediment released during construction would produce localized, negligible, short-term effects to water resources under this alternative from construction activities. All appropriate Federal and State water quality permits would be applied for and obtained prior to beginning work. Design parameters for demolition and construction would include measures to prevent construction debris and sediment from entering the river. Silt fencing and other best management practices would be employed during construction and would prevent large amounts of sediment from entering the river. Aggregate material on a small portion of the trail may wash away during a flood event and negligibly increase gravel in the river.

Cumulative Impact Analysis: Current conditions of the Belton Bridge have no impact to water resources. Construction activities under this alternative would have negligible effects and not change the long-term effects. Consequently, there would be no cumulative impacts under this alternative.

Conclusion: There would be localized, negligible, short-term effects to water resources under this alternative. There would be no cumulative impacts.

There would be no major adverse impacts to water resources whose conservation is: (1) necessary to fulfill specific purposes identified in the establishing legislation of the park, (2) key to the natural or cultural integrity of the park or opportunities for enjoyment of the park, or (3) identified as a goal in the park's general management plan or other National Park Service

planning documents. Therefore, neither of the alternatives would impair park resources or values.

Wildlife

Effects of Alternative A: Do not rehabilitate the Belton Bridge (No Action).

Impact Analysis: There would be no new impacts to wildlife if the proposed rehabilitation is not undertaken. If the bridge were to be removed in the future because of severe deterioration, there would be minor, indirect, localized, short-term, adverse impacts to wildlife due to increased noise, equipment and vehicles not normally present in the river corridor. After removal there would be minor, localized long-term, beneficial impacts by reducing a focal point of human activity and potential disturbance to wildlife.

Cumulative Impact Analysis: Because there are no new impacts associated with the no action alternative, there would be no cumulative impacts under this alternative.

Conclusion: No impacts would occur to wildlife under Alternative A, and there would be minor, indirect, localized, short-term adverse impacts. After removal there would be minor, localized, long-term beneficial impacts by reducing a focal point of human activity and potential disturbance to wildlife. There would be no cumulative impacts. The alternative would not produce major adverse impacts on wildlife whose conservation is (1) necessary to fulfill specific purposes identified in the establishing legislation of the park, (2) key to the natural or cultural integrity of the park or opportunities for enjoyment of the park, or (3) identified as a goal in the park's general management plan or other National Park Service planning documents. Consequently, there would be no impairment of wildlife as a result of the implementation of the alternative.

Effects of Alternative B: Rehabilitate the Belton Bridge (Preferred Alternative).

Impact Analysis: The construction activities associated with the rehabilitation of the bridge and the re-surfacing of the Belton Entrance Road Trail would have local, short-term, adverse, minor impacts to wildlife due to the increased noise, equipment, and vehicles not normally present within the river corridor. Surfacing of the Belton Entrance Road Trail would have local, long-term, minor impacts to wildlife due to disturbance from use of the trail.

Cumulative Impact Analysis: Cumulative impacts to wildlife would occur if construction activities are concurrent with other proposed projects in the area, such as construction of a new sewage treatment facility about 1 ½ miles from the project, construction of a new fire cache within ½ mile, and rehabilitation of the Rubideau Spring water system. The latter project involves construction of a water tank within ¼ mile of the Belton Bridge, with access to the site immediately above the Belton Entrance Road Trail. Proposed mechanical fuel reduction in the headquarters area, concurrent with this project and other projects in the larger area would result in more disturbance to wildlife and some loss of habitat.

Conclusion: Construction activities under alternative B would result in local, adverse, short-term and long-term, minor impacts to wildlife. Cumulative effects would be moderate, localized, long term and adverse. The alternative would not produce major adverse impacts on wildlife whose conservation is (1) necessary to fulfill specific purposes identified in the establishing legislation of the park, (2) key to the natural or cultural integrity of the park or opportunities for

enjoyment of the park, or (3) identified as a goal in the park's general management plan or other National Park Service planning documents. Consequently, there would be no impairment of wildlife as a result of the implementation of the alternative.

Threatened and Endangered Species and Species of Concern

Effects of Alternative A: Do not rehabilitate the Belton Bridge (No Action).

Impact Analysis: There would be no new impacts to threatened and endangered species and species of concern. If the bridge were removed in the future there would be minor, localized, short-term, adverse impacts to bald eagles, bull trout, northern goshawk, barred owl, and pileated woodpecker. After the bridge is removed there would be minor, localized, long-term, beneficial impacts by reducing a focal point of human activity and potential disturbance to these species.

Cumulative Impact Analysis: Because there are no new impacts associated with the no action alternative, there would be no cumulative impacts under this alternative.

Conclusion: No new impacts would occur to threatened and endangered species and species of concern under Alternative A. There would be minor, localized, short-term, adverse impacts to threatened and endangered species and species of concern if the bridge were removed. After removal there would be minor, localized, long-term, beneficial impacts by reducing a focal point of human activity and potential disturbance to these species.

Alternative A would not produce major adverse impacts on threatened and endangered species and species of concern whose conservation is (1) necessary to fulfill specific purposes identified in the establishing legislation of the park, (2) key to the natural or cultural integrity of the park or opportunities for enjoyment of the park, or (3) identified as a goal in the park's general management plan or other National Park Service planning documents. Consequently, there would be no impairment of threatened and endangered species and species of concern as a result of the implementation of Alternative A.

Effects of Alternative B: Rehabilitate the Belton Bridge (Preferred Alternative).

Impact Analysis:

Bald eagle: Construction activities proposed in Alternative B are short term, temporary events. No long-term effects to bald eagles would occur by either continuing the current conditions, or making the suggested improvements. Eagles may be displaced from foraging areas during the construction period. Cumulative effects from concurrent projects would be minimal since this is the only project immediately adjacent to the river. Water tank construction and fuel reduction would be immediately adjacent to this project, but would probably be completed before this project commences, as would the fire cache project that may displace eagles in that area. If any of these projects are concurrent with this project, displacement of bald eagles may increase. Impacts to bald eagles would be negligible to minor, localized, short-term and adverse.

Gray wolf: Wolves may occasionally hunt or roam through the project area, but their activity appears to be limited, with no recent wolf activity near the project area. There would be no loss of habitat or change in ungulate prey base populations from Alternative B. There would be no known long-term or cumulative effects to the gray wolf from Alternative B. There would be no effect to gray wolves.

Grizzly bear: The project area is within suitable habitat for grizzly bears, serving as seasonal foraging habitat and as a probable travel corridor. There would be no loss of grizzly bear habitat from Alternative B since the project occurs within the limits of the original road and bridge construction. Grizzly bears are wide-ranging species, and the project area is in a small portion of this range. Grizzly bears foraging in the area at night would not be displaced by project activities, since construction would occur in the daytime. Construction contract language would incorporate requirements to minimize impacts, including specifications for storage and disposal of food, refuse, construction materials, petroleum products, and human waste. Construction personnel would be trained in how to behave in the presence of bears. Should a habituated bear frequent the area, construction activities may be temporarily suspended while management actions are implemented. Grizzly bears are discouraged from frequenting developed areas to minimize human-bear conflicts; therefore, construction activity near the headquarters complex would not have a negative impact on bears. Construction noise and human activity may temporarily displace bears from use of habitat adjacent to the bridge. There would be negligible, localized, short-term, adverse effects to grizzly bears.

Canada lynx: Lynx are a wide-ranging species with unknown distribution and population numbers in the park, however, sightings and track reports are rare in the vicinity of the project area. Since lynx are generally nocturnal and construction would occur during the daytime, any lynx that may periodically use the area are not likely to be adversely affected. There would be no effect to snowshoe hares, the lynx's principal prey. Project construction activities would be temporary and not likely to affect lynx movement, hunting or other activities. Adverse long-term or cumulative effects are not expected. There would be no effect to Canada lynx.

Bull Trout: Bull trout are known to use the Middle Fork as a travel corridor, although there is no known spawning in the vicinity of the project area. Impacts to bull trout would be negligible to minor, localized, and short term. Bull trout in the immediate vicinity may be affected by short-term releases of sediment, but are not likely to be adversely affected by the construction activity.

Westslope cutthroat trout: Westslope cutthroat trout are known to use the Middle Fork as a travel corridor, but there is no known spawning within the project area. There are no known long-term or cumulative actions that would affect this species. Negligible effects would occur to Cutthroat trout in the immediate vicinity.

Marten, fisher and wolverine: These mammals may use habitat in the vicinity of the project area. No effects to these species would occur from Alternatives B since there is no loss of habitat. Any disturbance would be short-term and no construction would occur at night when they are most active. There would be no effects on these species.

Trumpeter swan: There would be no effect on these species from Alternative B because the project area would not be utilized except as a potential travel corridor through the area. No long-term or cumulative effects would occur.

Peregrine falcon: Since there are no known peregrine falcon nesting or foraging sites within the project area, this species would not be affected.

Harlequin duck: There is little evidence of harlequin ducks using this section of the Middle Fork River during summer. Sightings during the spring and fall suggest sporadic use of the river for staging at that time, and harlequins spend winters on the Pacific coast. Existing recreation activity on the river may already limit their use of the project area for nesting and foraging. No

effects to this species would occur due to the lack of known breeding activity on this portion of the Middle Fork.

Osprey, northern goshawk, Cooper's hawks, northern pygmy owl, barred owl, northern saw-whet owl, and pileated woodpecker: The project area contains lands that provide potential habitat for all of these species. According to the park's wildlife biologist, there are known nest sites for goshawks, barred owls, and pileated woodpeckers adjacent to the project. Temporary displacement may occur to these species, especially during the spring when nesting is initiated. Fall and winter displacement would have less impact as territories may enlarge or shift during the non-nesting period. This project would have no effect on osprey, Cooper's hawk, northern pygmy owl and northern saw-whet owl. The project would have negligible to minor, localized, short-term adverse impacts on northern goshawk, barred owl and pileated woodpecker.

Cumulative Impacts: Concurrent projects, especially construction of the sewage treatment facility, water tank, and mechanical fuel reduction, may result in cumulative impacts to bald eagles, grizzly bears, and the three species known to nest in the area (northern goshawk, barred owl, pileated woodpecker). Old-growth conifer forest immediately north of the project, and adjacent to the water tank as part of the water system project, also has known nesting sites, though the sites are not active every year. Alternate nest sites probably occur near the project area for all three species. Cumulative effects would be minor, localized, short-term adverse effects.

Conclusion: Alternative B would have no effect on gray wolf, Canada lynx, marten, fisher, wolverine, trumpeter swan, peregrine falcon, harlequin duck, osprey, Cooper's hawk, northern pygmy owl, or northern saw-whet owl. Alternative B would produce minor, localized, short-term adverse impacts on bald eagle, grizzly bear, northern goshawk, barred owl, and pileated woodpecker. There would be minor, localized, short-term adverse cumulative effects to bald eagle, grizzly bear, northern goshawk, barred owl, and pileated woodpecker. Impacts to bull trout and westslope cutthroat trout would be negligible to minor, short term and not likely to adversely effect.

Alternative B would not produce major adverse impacts on threatened and endangered species and species of concern whose conservation is (1) necessary to fulfill specific purposes identified in the establishing legislation of the park, (2) key to the natural or cultural integrity of the park or opportunities for enjoyment of the park, or (3) identified as a goal in the park's general management plan or other National Park Service planning documents. Consequently, there would be no impairment of threatened and endangered species and species of concern as a result of the implementation of the alternative.

HISTORIC STRUCTURES

Effects of Alternative A: Do not rehabilitate the Belton Bridge (No Action).

Impact Analysis: Section 106 of the National Historic Preservation Act of 1966, as amended, requires review of all projects that have the potential to affect cultural resources that are either listed or eligible for listing in the National Register of Historic Places. The Advisory Council on Historic Preservation's regulations, 36 CFR Part 800, define neglect of a historic property resulting in its deterioration as a federal action. No action would result in a finding of adverse

effect on a National Register-eligible property. Under Alternative A, there would be site-specific, long-term, moderate, adverse impacts to cultural resources.

Cumulative Impact Analysis: : Either alternative results in an adverse effect on historic structures. Proposed demolition of other historic structures in the area combined with removal of the bridge would have a moderate, long-term adverse, localized impact.

Conclusion: The current deterioration of the Belton Bridge would continue under Alternative A, with the eventual failure, collapse and/or removal of the bridge. This decision would result in moderate, long-term, adverse site specific impact.

Effects of Alternative B: Rehabilitate the Belton Bridge (Preferred Alternative).

Impact Analysis: Since construction would not result in new ground disturbance, Alternative B would have no impact on archeological sites or ethnographic resources. However, under Alternative B, there would be site-specific, long-term, moderate, adverse impacts to historic structures. The proposed rehabilitation work would require the replacement of all wood members of the bridge. The loss of so much historic fabric is not consistent with the Secretary of the Interior's "Standards for the Treatment of Historic Properties" (36 CFR Part 68) and would alter those characteristic that qualify the bridge for listing in the National Register of Historic Places. Specifically, the bridge would no longer retain integrity of design, materials, and workmanship. The action would result in a finding of adverse effect on a National Register-eligible property.

Cumulative Impact Analysis: When added to the proposed demolition of other National Register-eligible or potentially eligible buildings in the area, Alternative B would contribute an adverse increment to the overall cumulative impacts on historic structures.

Conclusion: Alternative B would provide for structural improvements, but result in the loss of significant historic design, materials, and workmanship. The bridge would no longer qualify for listing in the National Register of Historic Places. The rehabilitation under Alternative B would result in a moderate, long-term, site specific, adverse impact.

Alternatives A and B would not produce major adverse impacts on historic structures whose conservation is (1) necessary to fulfill specific purposes identified in the establishing legislation of the park, (2) key to the natural or cultural integrity of the park or opportunities for enjoyment of the park, or (3) identified as a goal in the park's general management plan or other National Park Service planning documents. Consequently, there would be no impairment of historic structures as a result of the implementation of the alternative.

VISITOR USE AND EXPERIENCE

Effects of Alternative A: Do not rehabilitate the Belton Bridge (No Action).

Impact Analysis: Because there is no change in the current situation under Alternative A, there would be no immediate effect on visitor use and experience. It is possible that in the absence of proactive rehabilitation, the bridge would eventually collapse or present a safety hazard to rafters, outfitters and other river users. Closure of the river to users until the debris is cleared or the safety hazard is corrected could result in a moderate, short-term, adverse effect to river users, and rafting outfitters. Hikers and bicyclists between headquarters area and the town of West

Glacier would continue to be affected by the closure of the bridge. This would result in a long-term, adverse, site specific, and moderate impact.

Cumulative Impact Analysis: There would be no cumulative impacts on visitors from eventual failure and removal of the bridge.

Conclusion: Alternative A would result in long term, moderate, adverse and site specific impacts on visitors.

Effects of Alternative B: Rehabilitate the Belton Bridge (Preferred Alternative).

Impact Analysis: The primary impact on the visitor use and experience under this alternative would result from delays for rafters while bridge materials are being removed or placed. Construction activities would be conducted after the main commercial and recreational rafting season, but some river rafters may experience periods of interrupted rafting. The construction specifications would require delays to be minimal. GNP would work with the four commercial rafting companies that operate float trips on the Middle Fork in the project area to provide notice of river closures. Notice of river closures would also be posted at popular recreational river-use put-in points. Construction activities would have minor, short-term, localized adverse effects on visitors and outfitters. Once the project is completed, the trail would be re-opened to hikers and bicyclists and result in moderate, beneficial, long-term localized impacts.

Cumulative Impact Analysis: There would be no cumulative impacts on visitors as a result of Alternative B.

Conclusion: During construction, Alternative B would have minor, short-term, localized, adverse effects on visitors and outfitters. After the project is completed there would be moderate, beneficial, long-term, localized impacts on visitors and outfitters.

PARK OPERATIONS

Effects of Alternative A: Do Not Rehabilitate the Belton Bridge (No Action).

Impact Analysis: Because there is no change in the current situation under Alternative A there would be no immediate effect on park operations. The trail would continue to be maintained, but would lose width due to sloughing from the adjacent slope. The bridge would continue to be closed to use because of its unsafe condition. Given the condition of the bridge, it would need to be removed at some time in the near future. Removing the bridge would have minor, localized short-term adverse impacts on park operations.

Cumulative Impact Analysis: There would be no cumulative impacts on park operations as a result of Alternative A.

Conclusion: Alternative A would have minor, localized, short-term, adverse impacts to park operations.

Effects of Alternative B: Rehabilitate the Belton Bridge (Preferred Alternative).

Impact Analysis: The rehabilitation of the bridge and the surfacing of the trail would add some additional cyclical maintenance costs to the park's operations budget. The placement of rock at the base of the slope would minimize the likelihood of bank creep and lessen cyclical maintenance costs to keep it open. Sections of the road have, occasionally in the past, been

covered by high water during flooding. Depending on the severity of the flooding, a portion of the compacted aggregate surfacing could be lost, requiring the replacement of aggregate material. Alternative B would result in minor, localized, long-term, adverse impacts on park operations.

Cumulative Impact Analysis: The additional cyclical maintenance costs associated with the bridge and trail would have a negligible to minor, long-term, localized, adverse effect on park operations when added to other park projects.

Conclusion: Alternative B would result in minor, localized, long-term, adverse impacts on park operations. Cumulative impacts would be negligible to minor, localized, long-term, and adverse.

CONSULTATION AND COORDINATION

Public scoping began February 3, 2003. Informational letters were mailed to the park's mailing list requesting comments. Two letters were received from the public. One letter raised concerns about disturbance to wildlife and visitors during construction, insuring that the bridge design retained the original appearance, avoiding the use of insecticide and fungicide treated timbers, and suggested confining the use to foot, bicycle and horses. They also expressed concerns about widening the Belton Entrance Road Trail and surfacing it. They urged the National Park Service to maintain it at its present width and not re-surface it. Concerns about cumulative impacts were raised with the waterline project that is scheduled to begin spring 2003. The other letter raised concerns about widening and re-surfacing the Belton Entrance Road Trail. They encouraged the National Park Service to also maintain it as a path.

Letters were also sent to the Blackfeet Tribal Business Council and the Confederated Salish and Kootenai Tribal Council and Preservation Office. Meetings were also held with representatives from both tribes and no objections were raised about the proposed project.

The U.S. Fish and Wildlife Service was also contacted. A biological assessment will be prepared for their review and concurrence.

The State Historic Preservation Office and the Advisory Council on Historic Preservation were notified of the adverse effect finding. The Advisory Council has indicated that they will not participate further. Section 106 of the National Historic Preservation Act is underway as part of this Environmental Assessment process.

Agencies Contacted

U.S. Forest Service, Flathead National Forest
U.S. Fish and Wildlife Service
Geological Services Division

Preparers and Consultants

Preparers:

Jack Gordon	Landscape Architect
Lon Johnson	Cultural Resource Specialist/Historical Architect
Bill Michels	Aquatic Biologist
Jack Polzin	Special Projects/Historic Preservation
Mary Riddle	Environmental Protection and Compliance Specialist
Allison Rowland	Compliance Technician

Contributors:

Tara Carolin	Ecologist
Steve Gniadek	Wildlife Biologist
Richard Menicke	Geographer
Joyce Lapp	Horticulturist
John Kilpatrick	Chief of Facility Management

List of Environmental Assessment Recipients:

Advisory Council on Historic Preservation
 Bill and Bob Lundgren
 Bob Sandman, Stillwater State Forest
 Burlington Northern Santa Fe Railroad
 Chair, Flathead County Board of Commissioners
 Coalition for Canyon Preservation
 Confederated Salish and Kootenai Tribal Preservation Office
 Conrad Burns, United States Senate
 Dennis Rehberg, United States House of Representatives, Missoula Offices
 Ev and Margaret Lundgren
 Flathead Basin Commission
 Flathead National Forest
 Fred Matt, Chair, Confederated Salish and Kootenai Tribal Council
 Friends of the Wild Swan
 Glacier County Commissioners
 Glacier Natural History Association
 Glacier Raft Company
 Great Northern Whitewater Resort
 Jack and Reggie Hoag
 James K. Johnson
 James St. Goddard, Chairman, Blackfeet Tribal Council
 John Case, Chairman, The Glacier Fund Board of Trustees
 Joyce Spoonhunter, Blackfeet Tribe Culture Department
 Judy Martz, Governor of Montana
 Karin Stevens Connolly
 Karen Wade, Regional Director, National Park Service, Denver
 Max Baucus, United States Senate
 Mayor of Browning Montana
 Mayors and City Councils of Kalispell, Columbia Falls and Whitefish
 Montana Department of Environmental Quality Permitting & Compliance, Helena
 Montana Department of Environmental Quality, Board of Environmental Review
 Montana Department of Environmental Quality, Water Protection Bureau
 Montana Department of Natural Resources and Conservation

Montana Environmental Information Center
Montana Fish, Wildlife, and Parks, Region One Supervisor, Kalispell
Montana Intergovernmental Clearing Office of Budget and Planning
Montana Preservation Alliance
Montana Raft Company
Montana State Clearinghouse
Montana State Historic Preservation Office
Montana Wilderness Association
Mr. and Mrs. Galvin
National Parks Conservation Association
Norman and Jean Adams
Pat and Riley McClelland
Public Libraries: Kalispell, Whitefish, Columbia Falls, Helena, Butte, Browning, Bozeman, Great Falls,
Missoula, Bigfork, and Lethbridge, Alberta, Canada
Richard Kuhl
U.S. Army Corps of Engineers
U.S. Environmental Protection Agency
U.S. Fish and Wildlife Service (Helena and Creston)
U.S. Geological Survey, Biological Resources Division
Waterton Lakes National Park
West Glacier School District No. 8
Wild River Adventures
Wilderness Watch

COMPLIANCE WITH FEDERAL AND STATE REGULATIONS

The NPS will comply with all applicable federal and state regulations when implementing Alternative B to rehabilitate the Belton Bridge.

National Environmental Policy Act (NEPA) and Regulations of the Council on Environmental Quality – The National Environmental Policy Act applies to major federal actions that may significantly affect the quality of the human environment. This generally includes major construction activities that involve the use of federal lands or facilities, federal funding, or federal authorizations. If the environmental effects are measurable then an Environmental Assessment (EA) is prepared to evaluate potential impacts. This Environmental Assessment meets the requirements of the NEPA and regulations on the Council on Environmental Quality in evaluating potential effects associated with activities on federal lands. If no significant effects are identified, a finding of no significant impact (FONSI) would be prepared. If significant impacts are identified, then a notice of intent (NOI) would be filed for preparation of an Environmental Impact Statement.

The Endangered Species Act of 1973, as amended (16 U.S.C. 1531 et seq.) – Section 7 of the Endangered Species Act is designed to ensure that any action authorized, funded, or carried out by a federal agency likely would not jeopardize the continued existence of any endangered or threatened plant or animal species. If a federal action may affect threatened or endangered species, then consultation with the U.S. Fish and Wildlife Service is required. The National Park

Service has determined that Alternative B would have no effect on Canada lynx, and gray wolf. The park has determined that Alternative B “may effect, but is not likely to adversely effect” bald eagles, grizzly bears, and bull trout. A biological assessment has been prepared for bull trout and sent to the U.S. Fish and Wildlife Service for review; the USFWS concurred with our determination that the preferred alternative “may affect, but is not likely to adversely affect” bull trout. A biological assessment will be prepared for bald eagles and grizzly bears.

Clean Water Act (CWA) and State and Local Water Quality and Floodplain Regulations—

If Alternative B is implemented, all necessary federal, state and local permits would be obtained to insure compliance with the Clean Water Act. These include a Section 404 permit from the Army Corps of Engineers, a Montana DEQ 3A permit, a Nondegradation Review Permit from Montana DEQ and a Montana Fish, Wildlife and Parks 124 Permit (Stream Preservation Act).

Wild and Scenic River Act- In 1976, Congress designated the North Fork and Middle Fork of the Flathead River as part of the National Wild and Scenic River System. The Middle Fork is designated as recreational for the entire length bordering Glacier National Park.

Executive Order 11988, Floodplain Management – The No Action and Alternative B are excepted actions under the NPS Floodplain Guidelines for compliance with Executive Order 11988. These actions are excepted because they are water dependent.

Executive Order 11990, Protection of Wetlands-No wetlands would be affected by the no action alternative or Alternative B according to the USFWS (1992) National Wetland Inventory Mapping.

National Historic Preservation Act of 1996, as amended (16 U.S.C. 470, et. Seq.) – Section 106 of the National Historic Preservation Act of 1966, as amended, and its implementing regulations, 36 CFR Part 800, requires federal agencies to consider effects of any federal action on cultural resources eligible for or listed on the National Register of Historic Places (NHRP), prior to initiating such actions. The regulations permit federal agencies to coordinate Section 106 compliance with the National Environmental Policy Act. Glacier National Park has notified the Advisory Council on Historic Preservation and the Montana State Historic Preservation Officer that it intends to use this Environmental Assessment to comply with Section 106.

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APPENDIX A. Draft Memorandum of Agreement.

DRAFT MEMORANDUM OF AGREEMENT SUBMITTED TO THE MONTANA STATE HISTORIC PRESERVATION OFFICER PURSUANT TO 36 CFR 800

WHEREAS, Glacier National Park has determined that the Belton Bridge Rehabilitation Project will have an effect upon the Belton Bridge, a property eligible for inclusion in the National Register of Historic Places, and has consulted with the Montana State Historic Preservation Officer (SHPO) pursuant to 36 CFR Part 800, regulations implementing Section 106 of the National Historic Preservation Act (16 U.S.C. 470f); and

WHEREAS, Glacier National Park has notified the Advisory Council on Historic Preservation (Council) of the adverse effect finding and the Council has chosen not to join the consultation; and

WHEREAS, the Belton Bridge has been documented to the standards of the Historic American Engineering Record (HAER No. MT-68);

NOW, THEREFORE, Glacier National Park and the Montana State Historic Preservation Officer agree that the undertaking shall be implemented in accordance with the following stipulations in order to take into account the effect of the undertaking on historic properties.

Stipulations

Glacier National Park will ensure that the following measures are carried out:

1. Within one year of project completion, Glacier National Park will install a wayside exhibit in the vicinity of the Belton Bridge. The exhibit will interpret the history of the area, the sequence of bridges, and flooding and its significance to the park.
2. Glacier National Park will provide the proposed wayside exhibit text to the Montana State Historic Preservation Officer for review and approval prior to installation.

Administrative Conditions

1. If any Stipulations have not been implemented within two (2) years after execution of this agreement, the parties to this agreement shall review this agreement to determine whether revisions are needed. If revisions are needed, the parties to this agreement will consult in accordance with 36 CFR Part 800 to make such revisions.
2. Should any party to this agreement object within thirty (30) days after receipt to any plans provided for review pursuant this agreement, or to the manner in which this agreement is being implemented, Glacier National Park shall consult with the objecting party to resolve

the objection. If Glacier National Park determines that the objection cannot be resolved, Glacier National Park shall forward all documentation relevant to the dispute to the Council. Glacier National Park will take into account the Council's recommendations in reaching a final decision regarding the dispute.

Execution of this Memorandum of Agreement by Glacier National Park and the Montana State Historic Preservation Officer and implementation of its terms, evidence that Glacier National Park has afforded the Montana State Historic Preservation Officer an opportunity to comment on the Belton Bridge Rehabilitation Project and its effects on historic properties, and that Glacier National Park has taken into account the effects of the undertaking on historic properties.

Glacier National Park

By: _____ Date: _____
Michael O. Holm, Superintendent

Montana State Historic Preservation Officer

By: _____ Date: _____
Mark Baumlert, Ph.D.

APPENDIX B. Advisory Council on Historic Preservation Letter



January 15, 2003

Michael O. Holm
Superintendent
National Park Service
Glacier National Park
West Glacier, MT 59936

RE: *Rehab of Beltan Bridge, West Glacier, MT.*

Dear Mr. Holm:

We received your notification and supporting documentation regarding the adverse effects of the referenced project, a property eligible for inclusion in the National Register of Historic Places. Based upon the information you provided, we do not believe that our participation in consultation to resolve adverse effects is needed. However, should circumstances change, please notify us so we can re-evaluate if our participation is required. Pursuant to 36 CFR 800.6(b)(iv), you will need to file the Memorandum of Agreement, and related documentation at the conclusion of the consultation process. The filing of this Agreement with the Council is necessary to complete the requirements of Section 106 of the National Historic Preservation Act.

Thank you for providing us with your notification of adverse effect. If you have any questions, please contact Alan Stanfill at 303/969-5110 or via eMail at astanfill@achp.gov.

Sincerely,

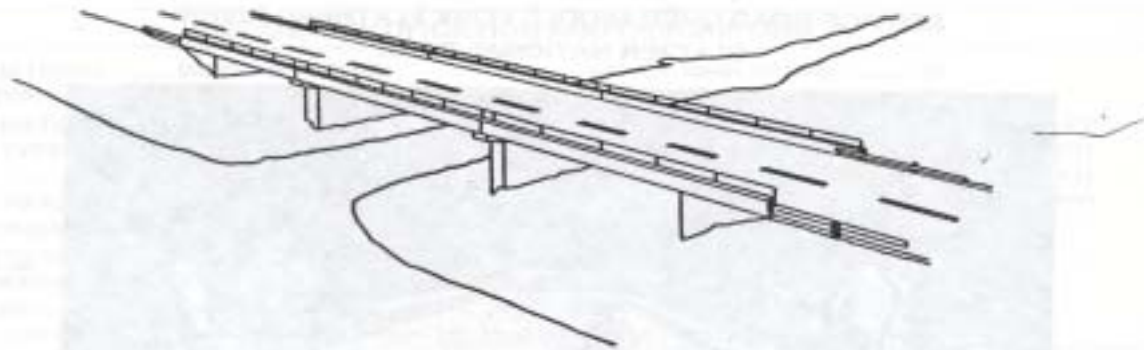
Nancy Kochan

Nancy Kochan
Office Administrator/Technician
Western Office of Federal
Agency Programs

ADVISORY COUNCIL ON HISTORIC PRESERVATION

12136 West Bayaud Avenue, Suite 330 • Lakewood, Colorado 80228
Phone: 303-969-5110 • Fax: 303-969-5115 • achp@achp.gov • www.achp.gov

APPENDIX C. Federal Highway Administration Bridge Inspection Report



BRIDGE INSPECTION REPORT

INSPECTION TYPE: INTERIM

MIDDLE FORK BRIDGE

SERVICE ROAD OVER MIDDLE FORK FLATHEAD RIVER

GLACIER NATIONAL PARK

STRUCTURE NO. 1430-039S

DATE OF INSPECTION: 6/13/00

KILOMETER POINT 0.00
(MILEPOST 0.00)



U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION
FEDERAL LANDS HIGHWAY
BRIDGE INSPECTION AND MANAGEMENT PROGRAM

IDENTIFICATION PHOTOGRAPHS
MIDDLE FORK BRIDGE

STRUCTURE NO. 1430-039S
DATE OF INSPECTION: 6/13/00

SERVICE ROAD OVER MIDDLE FORK FLATHEAD RIVER
GLACIER NATIONAL PARK



LOOKING NORTH (AHEAD)
(PHOTO FROM 7/99)



DOWNSTREAM OR WEST SIDE
(PHOTO FROM 7/99)

1 OF 8

STRUCTURE SUMMARY
MIDDLE FORK BRIDGE

STRUCTURE NO. 1430-0395
DATE OF INSPECTION: 6/13/00

BRIDGE IDENTIFICATION AND DESCRIPTION

MAIN SPAN MATERIAL:	WOOD or TIMBER	NO. OF MAIN SPANS:	10
MAIN SPAN TYPE:	STRINGER/MULTI-BEAM or GIRDE	NO. OF APPRL SPANS:	0
APPR. SPAN MATERIAL:	N/A	STRUCT. TOTAL LENGTH:	46.3 M (152.0 FT)
APPR. SPAN TYPE:	N/A	MAX. SPAN LENGTH:	4.6 M (15.0 FT)
DECK TYPE:	WOOD OR TIMBER	DECK WIDTH:	6.6 M (21.8 FT)
WEARING SURFACE:	WOOD OR TIMBER	CURB TO CURB WIDTH:	6.0 M (19.8 FT)
ABUT. #1 FOUNDATION:	SILL	SKEW ANGLE:	0°
ABUT. #2 FOUNDATION:	SILL	YEAR CONSTRUCTED:	1921
PIER FOUNDATION:	SPREAD FTG ON BEARING MATL	YEAR RECONSTRUCTED:	N/A
PROJ./PLAN REF. NO.:	UNKNOWN / UNNUM	FRACTURE CRITICAL?	NO
ADDITIONAL DATA:			

Span #1 - #10 - Length 15'; Type (Untreated Timber on Concrete Arch)

LOCATION

GLACIER NATIONAL PARK
STATE: MONTANA
COUNTY: FLATHEAD
FACILITY CARRIED: SERVICE ROAD
FEATURE INTERSECTED: MIDDLE FORK FLATHEAD RIVER
KILOMETER POINT: 0.00 (MILEPOST 0.00)

LOCATION: 0.7 Mi. E. of West Glacier on service road. "Bridge Closed to Vehicle Traffic".

STRUCTURE EVALUATION SUMMARY

This bridge is in very poor condition and has shown signs of continued deterioration over the past several inspection cycles. Many of the timber stringers, posts, caps, and sills are rotten and decayed. Isolated failures in some of the timber sills and caps have occurred within the past year, leading to substantial settlement/deflection in the deck. The log cribbing/timber lagging which compose the wingwalls at each end of the structure have either collapsed or are in very poor condition. Timber bents at each abutment show significant movement due to approach embankment earth pressure. NPS staff have recently constructed barricades at each end of the structure to close it to all use.

The approaches are in poor condition. Approach embankments have sloughed significantly due to failures of the wingwalls at both abutments.

At this time we are recommending that the timber bents (sills, posts and caps) be replaced. Individual stringers which show advanced rot should also be replaced. Additionally, the wingwalls and timber lagging behind each abutment will need to be reconstructed and the approach embankments rebuilt. Until the above deficiencies can be addressed, we are recommending the continued closure of this structure to all use. If temporary shoring were used to replace the currently failed members, we would support the limited use of this structure to pedestrian traffic only. Regardless of shoring however, significant reconstruction is warranted within the 12 months to avoid additional failure.

INSPECTION TEAM: JEFF BERG, JERRY BURGESS (NPS)

OFFICE TEAM LEADER:	JEFF BERG	PROGRAM COORDINATOR:	JOHN THIEL
VANCOUVER, WA	(360) 696-7719	STERLING, VA	(703) 404-6251

The Federal Lands Highway Divisions provide highway and bridge design, construction, and inspection services for the National Park Service (NPS) nationwide. The Bridge Inspection and Management Program (BIP) manages the bridge inventory for all NPS areas in compliance with the National Bridge Inspection Standards. As a minimum, any public vehicular structure having an overall length of 20 feet or greater should be inspected as part of the BIP service. Tunnels, major trail bridges, loading docks, and other significant structures may be inspected upon request.

RECOMMENDATIONS AND ESTIMATED COSTS

STRUCTURE NO. 1430-0395
DATE OF INSPECTION: 6/13/00

ESTIMATED REMAINING LIFE (YEARS) _____

0

(At current load limits without major repairs or rehabilitation.)

PURPOSE OF RECOMMENDED IMPROVEMENT _____

3

1 - Maintenance 2 - Rehabilitation and/or Reconstruction 3 - Construction

PRIORITY OF IMPROVEMENT _____

A

A - Structure is closed, in imminent danger of collapse, presents a critical safety hazard, or meets all three of the following criteria:
1) Has a severe structural inadequacy; 2) Has a high traffic volume; 3) Is of vital importance to the community or area.
B - Structure is critically deficient or presents a safety hazard, but can remain in service at reduced loads with frequent inspections.
C - Structure is deficient, functionally obsolete, or requires a high degree of maintenance.
D - Structure is generally in good condition. Preventative maintenance may be required.
E - Structure is under construction or reconstruction.

REC. NO.	ITEM NO.	RECOMMENDATIONS	ESTIMATED COSTS		
			MAINT.	REHAB.	CONSTR.
1	60.11	Replace timber bents (piles, posts and caps).	\$0	\$0	\$75,000
2	222.5	Reconstruct log culverts and embankment fill at both ends of bridge.	\$0	\$0	\$50,000
3	59.3	Rehabilitate concrete arch. Remove unsound concrete and patch to original design lines.	\$0	\$0	\$25,000
4	59.4	Replace timber stringers which show signs of decay.	\$0	\$0	\$10,000
Estimated costs are for labor and materials only, and do not reflect additional costs associated with a construction contract.			TOTAL ESTIMATED COSTS:	\$0	\$0
					\$160,000

REMARKS:

FIELD TEAM LEADER: JEFF BERG

REPORT CHECKED BY: MARCO VENEROSO

REPORT APPROVAL: JEFF BERG

DATE: 6/15/00

3 OF 8

FIELD INSPECTION REPORT

STRUCTURE NO. 1430-039S
DATE OF INSPECTION: 6/13/00

CONDITION RATING CODES FOR ITEMS 58 - 62, 222, 223	
0 NOT APPLICABLE	3 SERIOUS CONDITION - loss of section, deterioration, spalling, or worse have seriously affected primary structural components. Local failures are possible. Fatigue cracks in steel or shear cracks in concrete may be present.
1 EXCELLENT CONDITION	2 CRITICAL CONDITION - advanced deterioration of primary structural elements. Fatigue cracks in steel or shear cracks in concrete may be present or about to have reached substructure support. Unless closely monitored it may be necessary to close the structure until corrective action can be taken.
2 VERY GOOD CONDITION - no problems noted.	1 "TRANSIENT" FAILURE CONDITION - major deterioration or section loss present in critical structural components or obvious vertical or horizontal movement affecting structure stability. Structure is closed to traffic but corrective action may return structure to light service.
3 GOOD CONDITION - some minor problems.	0 FAILED CONDITION - out of service; beyond corrective action.
4 SATISFACTORY CONDITION - structural elements show some minor deterioration.	
5 FAIR CONDITION - all primary structural elements are sound but may have minor section loss, cracking, spalling, or scour.	
6 POOR CONDITION - advanced section loss, deterioration, spalling, or scum.	
CONDITION RATING CODE EQUIVALENTS FOR SUB-ELEMENTS	
G = GOOD (CODES 7 - 9) F = FAIR (CODES 5 - 6) P = POOR (CODES 0 - 4)	

58. DECK	7	ITEM REFERENCE AND REMARKS	
1. DECK SLAB	G	58.1	Timber decking placed in 1987.
2. EXPANSION JOINTS	N		
3. WEARING SURFACE	N		
4. RIDEABILITY	G		
5. CURBS, SIDEWALKS, AND MEDIAN	G		
6. PARAPETS AND/OR RAILINGS	G	58.6	Steel section has been added to upstream and downstream rail to prevent removal of rail.
7. DRAINS AND DRAINAGE	N		
8. UTILITIES	G		
9. DEFLECTION AND/OR VIBRATION	N		
10. OTHER	N		
59. SUPERSTRUCTURE	5	59.2	A few of the timber stringers were replaced in 1987 when bridge was redecked. Some 4 x 12 planks have been added (scaabed) parallel to existing stringer. Stringers generally weathered, with seasoning checks and splits. Several timber stringers have advanced decay and are bulging and crushing.
1. BEARING DEVICES	N	59.3	Moderate damage to concrete arch. Spalling on outside edges, 2 to 3 inches deep.
2. RIBS OR BEAMS	F		
3. ARCHES OR SLAB(S)	N		
4. FLOOR BEAMS AND STRINGERS	N		
5. TRUSSES	N		
6. DIAPHRAGMS AND BRACING	N		
7. PAINT	N		
8. FASCIA(S)	N		
9. DEFLECTION AND/OR VIBRATION	F		
10. ALIGNMENT	N	60.1, 60.13	Posts A and B at the south abutment are split and leaning toward stream. Post A at north abutment is decayed. Most all posts are badly decayed with large splits, checks and section loss near lower bearing.
11. OTHER	N		
60. SUBSTRUCTURE	1	60.3, 60.15	The downstream end of the 12 x 12 timber cap at the north abutment is rotted, crushing under post "A". Timber caps and sills at intermediate bents show signs of advanced decay. Boring and probing of sills/caps indicates substantial rot with little wood strength remaining. Downstream portion of sill at bent #2 has failed due to decay.
ABUTMENTS		60.4, 60.6	Bulkheads at both abutments are badly decayed, show movement from earth pressure. Wingwalls at both abutments are collapsed/failed.
1. BREASTWALLS OR COLUMNS	P		
2. PILE BENTS	N		
3. CAPS AND/OR BEARING SEATS	P		
4. BACKWALLS AND/OR BULKHEADS	G		
5. FOUNDATIONS	P		
6. WINGWALLS	N		
7. WEEP HOLES	N		
8. EXPANSION JOINTS	N		
9. EROSION AND/OR SCOUR	G		
10. SETTLEMENT OR DEFLECTION	P	60.10, 60.18	Isolated failures in timber sills, caps have resulted in settlement of the timber superstructure and substructure. Settlement of the downstream portion of bent #2 and the superstructure above (due to sill failure) is very apparent.
11. SLOPE PROTECTION	N		
12. OTHER	N		
PIER(S)		60.15	Timber cap at bent #9 is broken on upstream overhang. The downstream ends of timber caps at bents #2 and #3 are rotted and crushed up to 1/4 inch.
13. WALL(S) AND/OR COLUMN(S)	P		
14. PILE BENT(S)	N		
15. CAPS AND/OR BEARING SEATS	P		
16. FOUNDATIONS	G		
17. EROSION AND/OR SCOUR	G		
18. SETTLEMENT OR DEFLECTION	P		
19. OTHER	N		

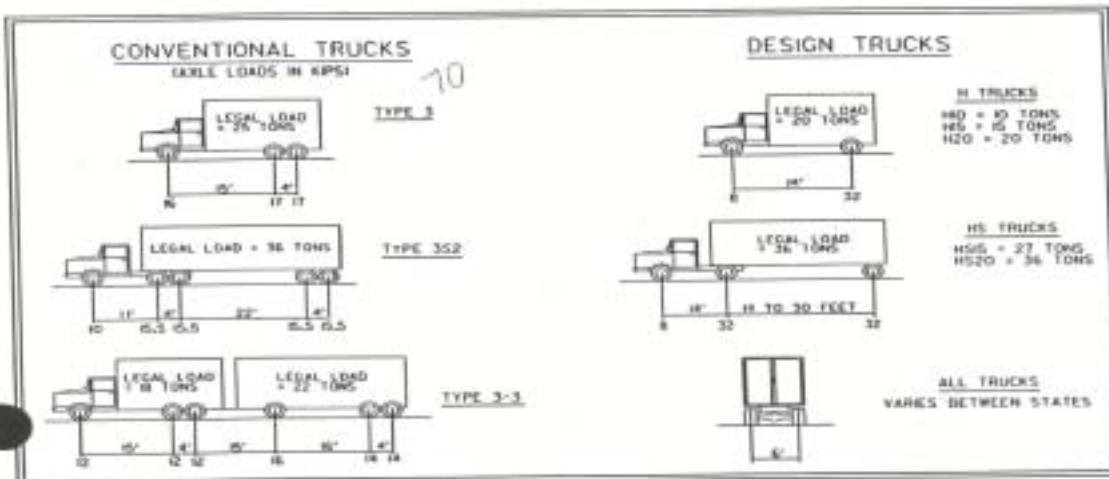
4 OF 8

STRUCTURE LOAD RATING

STRUCTURE NO. 1430-039S

TRUCK TYPE	INVENTORY RATING (NORMAL TRAFFIC)		OPERATING RATING (MAXIMUM LOAD)	
	METRIC TONS	TONS	METRIC TONS	TONS
H				
HS				
TYPE 3				
TYPE 3S2				
TYPE 3-3				
DESIGN LOADING: OTHER OR UNKNOWN				
<input checked="" type="checkbox"/>	ORIGINAL LOAD CAPACITY REMAINS			
<input type="checkbox"/>	ORIGINAL LOAD CAPACITY REDUCED			
<input type="checkbox"/>	ORIGINAL LOAD RATING CALCULATION APPLICABLE			
<input type="checkbox"/>	ORIGINAL LOAD RATING CALCULATION REVISED			
DATE OF LOAD RATING CALCULATION:				
LOAD RATING CONTROLLED BY:				

REMARKS: No rating analysis performed. Structure permanently closed to vehicular traffic.



6 OF 8

STRUCTURE INVENTORY AND APPRAISAL

STRUCTURE NO. 1430-039S

STRUCTURE IDENTIFICATION

(201) PARK: GLACIER NATIONAL PARK	(1) STATE: 300-MONTANA (MT)
(202) STRUCT. NAME: MIDDLE FORK BRIDGE	(2) STATE HWY. AGENCY DIST.: 0
(203) STRUCTURE KIND: 1-BRIDGE	(3) COUNTY CODE: 029-FLATHEAD
(204) STRUCTURE NO.: 1430-039S	(4) CITY/PLACE CODE: 0
(205) NPS REGION: 1-INTERMOUNTAIN	(5) INVENTORY ROUTE: 16800
(206) ROUTE CODE NO.: 0	(6) FEATURES INTERSECTED: MIDDLE FORK FLATHEAD RIVER
(207) ROAD SECTION NO.: 038S	(7) FACILITY CARRIED: SERVICE ROAD
(208) NPS ROAD CLASS: II	(8) STATE STRUCTURE NO.: 999999999999999
(209) WITHIN NPS BNDRY? Y	(9) LOCATION: 0.7 M. E. of West Glacier on service
(210) OPERATING UNIT: PARK	(10) INV. RTE. - MIN. VERT. CLR.: 9999
(211) NPS PROJECT NO(S): UNKNOWN	(11) KILOMETER PT.: 0.00 (MILEPOST 0.00)
(212) DRAWING NO(S): UNNUM	(12) YEAR BUILT: 1921
(21) MAINTAINED BY: 96-NATIONAL PARK SERVICE	(13) YEAR REBUILT: 0
(22) OWNER: 96-NATIONAL PARK SERVICE	(14) TOLL: 3-FREE ROAD
	(15) HISTORICAL DESIGNATION: S-NOT ELIGIBLE

STRUCTURE DESCRIPTION, FOUNDATION, AND DECK TYPE

(43) MAIN STRUCT. TYPE: 702-WOOD w/ TIMBER-STRINGER/MULTI-DE	(44) APPROACH STRUCT. TYPE: 702-WOOD w/ TIMBER-STRINGER
(45) NO. OF MAIN SPANS: 10	(46) NO. OF APPROACH SPANS: 0
(48) MAX. SPAN LENGTH: 4.8 M (15.0 FT)	(106) WEAR SURF/PROTECT SYSTEM:
(49) STRUCTURE LENGTH: 48.3 M (158.0 FT)	A) TYPE WEARING SURFACE: 7-WOOD OR TIMBER
(215) ABUTMENT FDS: 11-#1: BILL #2: BILL	B) TYPE MEMBRANE: N-NOT APPLICABLE
(217) PIER FDS: 22-#1: SPREAD FTG ON BEARING MAT'L #2:	C) TYPE PROTECTION: N-NOT APPLICABLE
(107) DECK TYPE: 9-WOOD OR TIMBER	(218) IS SALT USED? N

LOAD RATING AND POSTING

(31) DESIGN LOAD: OTHER OR UNKNOWN	(41) LOAD RESTRICTION: K-BRIDGE CLOSED
(86) INVENTORY RATING: 0 METRIC TONS (0 TONS)	(70) BRIDGE POSTING: 0-POSTING REQUIRED
(84) OPERATING RATING: 0 METRIC TONS (0 TONS)	

GEOMETRY, TRAFFIC, AND NAVIGATIONAL DATA

(16) LATITUDE: 0°	(17) LONGITUDE: 0°	(52) DECK WIDTH: 6.6 M (21.6 FT)
(19) DETOUR LENGTH: 5.00 KM (5.0 MI)	(22) APPR. ROADWAY WIDTH: 9.1 M (30.0 FT)	(213) APPR. PAVEMENT WIDTH: 7.3 M (24.0 FT)
(20) LANES ON STRUCTURE: 2	LANES UNDER STRUCTURE: 0	LEFT SHOULDER: 0.9 M (3.0 FT) RIGHT SHOULDER: 0.9 M (3.0 FT)
SERVICE ON: 3-PEDESTRIAN/BICYCLE	SERVICE UNDER: 5-WATERWAY	(33) BRIDGE MEDIAN: 0-NO MEDIAN
(29) AVG. DAILY TRAFFIC: 0	(30) YEAR OF ADT: 2000	(24) SKEW ANGLE: 0°
(114) FUTURE ADT: 0	(115) YEAR OF ADT: 2020	(26) DECK FLARE: 0
(101) PARALLEL STRUCTURE: N-NONE		(47) TOTAL HORIZ. CLEARANCE: 6.0 M (19.8 FT)
(38) NAVIGATION CONTROL? 0		(50) SIDEWALKS: LEFT: 0.0 M (0.0 FT) RIGHT: 0.0 M (0.0 FT)
(39) VERTICAL CLEARANCE: 0 M (0.0 FT)		(214) BRIDGE RAIL TYPE: 171-FULL HEIGHT (NO PARAPET)
(40) HORIZONTAL CLEARANCE: 0 M (0.0 FT)		(215) BRIDGE RAIL HEIGHT: 1.0 M (3.2 FT)
(111) ABUT. OR PIER PROTECTION:		(53) MIN. VERT. CLEAR. OVER DECK: 9999
HORIZONTAL UNDERCLEARANCE: (56) RIGHT: 0.0M (56) LEFT: 0.0M		(54) MIN. VERT. UNDERCLEARANCE: 0.0 M (0.0 FT)

CONDITION AND APPRAISAL DATA, PROPOSED IMPROVEMENTS, AND COSTS

(58) DECK: 7	(67) STRUCTURAL EVALUATION: 0
(59) SUPERSTRUCTURE: 5	(68) DECK GEOMETRY: 0
(60) SUBSTRUCTURE: 1	(69) UNDERCLEARANCES: N
(61) CHANNEL: 6	(71) WATERWAY ADEQUACY: 7
(62) CULVERT: N	(72) APPROACH ALIGNMENT: 5
(222) APPROACHES: 3	(113) SCOUR CRITICAL: 6
(223) RETAINING WALL: N	(225) PURPOSE OF IMPROVEMENT: 3-CONSTRUCTION
(224) EST. REMAINING LIFE: 0 YRS	(226) IMPROVEMENT PRIORITY: A-CRITICAL
(36) TRAFFIC SAFETY FEATURES: 0000	(227) MAINTENANCE COST: \$0.00
(75) WORK TYPE: 311-REPLACE CONTRACT	(228) REPAIR/REHAB. COST: \$0.00
(76) IMPROVEMENT LENGTH: 48.3 M (160.0 FT)	(229) CONSTRUCTION COST: \$150,000.00

INSPECTION DATES

(90) INSPECTION DATE: 06-00	(91) FREQ. OF INSP: 12 MOS	(92) CRITICAL FEATURE INSPECTION (CFI):
(219) ADD. STUDIES NEEDED? NO-NONE		(A) PRACT. CRIT.: N INSP. EVERY: 0 MOS. (A) LAST INSP.: 0
(93) SPECIAL STUDY TYPE: 0-NONE		(B) UNDERWATER: N INSP. EVERY: 0 MOS. (B) LAST INSP.: 0
(94) SPECIAL STUDY DATE: 00		(C) SPECIAL INSP.: N INSP. EVERY: 0 MOS. (C) LAST INSP.: 0

(95) REMARKS:

(231) ADDITIONAL CONSIDERATIONS:

8 OF 8

APPENDIX A - PHOTOGRAPH SHEET
MIDDLE FORK BRIDGE

STRUCTURE NO. 1430-039S
DATE OF INSPECTION: 6/13/00



PHOTO #1 - LOOKING NORTH AT UNDERSIDE OF DECK



PHOTO #2 - LOOKING SOUTH TOWARDS SOUTH ABUTMENT

**APPENDIX A - PHOTOGRAPH SHEET
MIDDLE FORK BRIDGE**

STRUCTURE NO. 1430-039S
DATE OF INSPECTION: 6/13/00



PHOTO #3 - NORTHWEST WINGWALL



PHOTO #4 - LOOKING SOUTH (BACK)

APPENDIX A - PHOTOGRAPH SHEET
MIDDLE FORK BRIDGE

STRUCTURE NO. 1430-039S
DATE OF INSPECTION: 6/13/00



PHOTO #5 - LOOKING NORTH (AHEAD) ALONG DOWNSTREAM SIDE



PHOTO #6 - LOOKING NORTH (AHEAD) AT DOWNSTREAM END OF BENT #2

· APPENDIX A - PHOTOGRAPH SHEET
MIDDLE FORK BRIDGE

STRUCTURE NO. 1430-039S
DATE OF INSPECTION: 6/13/00

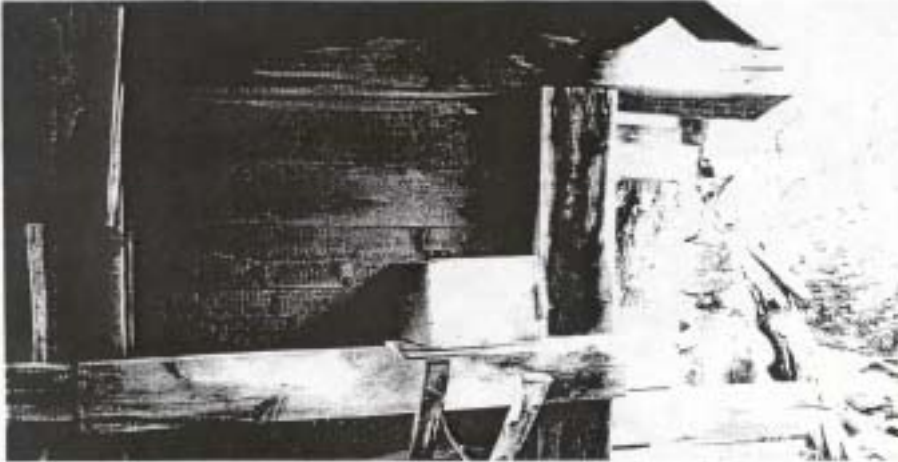


PHOTO #7 - LOOKING AT DOWNSTREAM END OF SOUTH ABUTMENT